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UNITED STATES DEPARTMENT OF AGRICULTURE

BULLETIN No. 594

Contribution from the Bureau of Crop Estimates
L. M. ESTABROOK, Chief

Washington, D. C. ▼ February 21, 1918

GEOGRAPHY OF WHEAT PRICES

SUMMARY OF CONDITIONS AFFECTING FARM PRICES OF WHEAT IN DIFFERENT PARTS OF THE UNITED STATES

By

L. B. ZAPOLEON, Division of Crop Records

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WASHINGTON
GOVERNMENT PRINTING OFFICE
1918

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SIGNIFICANCE OF REGIONAL PRICE DIFFERENCES.

Extreme geographic differences prevail in prices paid to farmers.

Farm prices increase or decrease in well-defined directions, varying with each item of production.

Character of the data employed; counties the basis of measurement.

The prices paid to farmers for a given product vary so greatly throughout the United States, and the variations are so closely interwoven with changing economic conditions as to indicate a field of research of practical value and economic interest. That wide differences should be found throughout the country in the prices of certain perishable farm products is to be expected. But agricultural staples not perishable in character, and of general consumption, exhibit a like disparity; even when price differences due to grade or quality are relatively small, more than 100 per cent variation frequently obtains throughout producing regions of the United States. Neighboring counties often show distinct differences in price.

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Two sets of factors are concerned in producing variations in farm or producers' price. One set has to do with the general price level of a given product; the other set is regional in its effect and divides the United States into sections according to price disparities. Climatic changes (affecting the outcome of the harvest), the outbreak of war, changes in the purchasing value of money, and other factors produce price changes that are nation-wide in extent. But differences in freight rates and transportation facilities, proximity to or remoteness from consuming territories, and other factors in the relationship of local to general distributive conditions, though affecting smaller areas, are equally potent and more stable in their influence. The latter class of factors—those dividing the United States into zones according to the price paid farmers for a given product—presents a field that is only partially developed.

Obviously farm price is a potent factor in adjustments of agricultural production. Just as climatic limitations on agriculture are shown on maps, so do farm prices, on sufficiently detailed maps, align themselves into zones, since price variations increase or decrease in well-defined directions. But this local price advantage or disadvantage varies with each product, according to its characteristics and commercial movement; the extent and regularity of zones having equal price figures change with each crop, and so also do the direction and rate of increase. Thus, southern farmers, raising varieties of wheat mostly softer than those of the North and West, receive on an average up to 60 cents per bushel more. The lowest wheat prices occur in regions marked by high prices of corn. Eastern farmers receive decidedly higher price averages for bulky commodities, such as hay, than for cereals. Much irregularity occurs in the prices of products wherein local consumption is important, such as corn or vegetables; greater stability, however, prevails in prices of wheat and oats. Within each State there is usually a variation of at least 20 cents per bushel in corn prices, which is about the cost of sending corn from Chicago to Liverpool, under normal conditions.

This publication deals with the wide variation in the producers' price of wheat throughout the continental United States. State price averages usually embrace large areas and dissimilar conditions; therefore the county has been used as the smallest available working area wherein approximately similar conditions of supply and demand prevail. As the ratios of sectional prices fluctuate with unusual market conditions, an average for the five years, 1910–1914, was employed to differentiate normal from spasmodic differences. Basic figures for each of the five years were compiled from an annual total of about 30,000 township reports. The result constitutes, in effect, a survey of the geography of wheat prices and price factors.

In assembling the material herein, a threefold plan has been pursued:

First, a tabular presentation of the price averages, by counties (Appendix, p. 34) is supplemented by maps and graphs, to show geographic price zones and related factors.

Second, the most suggestive bearings of the indicated price differences are outlined. In an empirical method of treatment only is this phase attempted, for price factors are complex, frequently interdependent, and are not susceptible of absolute measurement. To this has been added a brief retrospective view of price factors from 1871 to 1915, for the purpose of showing present tendencies through their indicated development.

Finally, gross price has been contrasted with actual returns by coordinating prices, yields, and cost of production per bushel and per acre.

SURVEY OF GEOGRAPHY OF WHEAT PRICES.

From a minimum in Idaho and Montana, prices paid wheat growers graduate upward toward the coasts, with maximum price in the southeast.

Price increases follow direction of commercial wheat movement from exporting to importing regions.

Map 1, which is given opposite, has been condensed to a 10 cent price unit, in order to delimit the general price zones without the intrusion of minor local variations. Blank spaces indicate areas of little or no production, according to the 1909 census. Figures within each State show estimated wheat surplus or deficiency (i. e., difference between production and consumption within the State), indicating the direction of the commercial wheat movement.

The minimum price paid wheat growers occurs within the areas of surplus wheat production, in central Montana and eastern Idaho. With a high rail and lower ocean freight rate eastward, and a shorter rail but higher ocean freight westward, this territory is most disadvantageously situated as to foreign and domestic wheat markets. Radiating from this region, prices graduate upward in every direction until the maximum, toward the coasts, is reached. Generally speaking, the surplus-producing areas have the lowest prices, and the converse also is true. From the described region of lowest prices two main currents, Pacific and eastward, are apparent, following closely the direction of wheat shipments.

The Pacific wheat movement is of much smaller volume than the eastward traffic. The surplus is concentrated in a relatively small area in the Northwest. Westward from this area prices increase steadily toward the Pacific seaboard. Prices rise also southward toward areas of insufficient wheat production, the maximum price being reached in southern California.

The wheat movement eastward attains much larger proportions. The surplus swells to tremendous volume, progressing through the trans-Mississippi wheat belt. This surplus, in the form either of wheat or of wheat flour, supplements deficient production to the east and south, and comprises the bulk of the export wheat. Here again prices augment in the direction of the wheat flow, increasing slowly eastward, much more rapidly and irregularly southward, in which direction the wheat movement is of less volume. The highest farm prices of wheat are reached in the southeast.

WHEAT VERSUS CORN AND OATS—PRICE ZONES COMPARED.

Corn—Area of minimum farm price in adjoining sections of Iowa, Nebraska, South Dakota, and Minnesota.
Oats—Area of minimum farm price immediately north of that of corn.

Comparison of the farm price zones of wheat with those of corn and oats discloses suggestive differences. The production of corn and oats is much greater, yet a smaller percentage enters into the commercial movement, the major part being retained on the farms. Population requirements do not directly dominate price progressions of corn and oats as they do those of wheat.

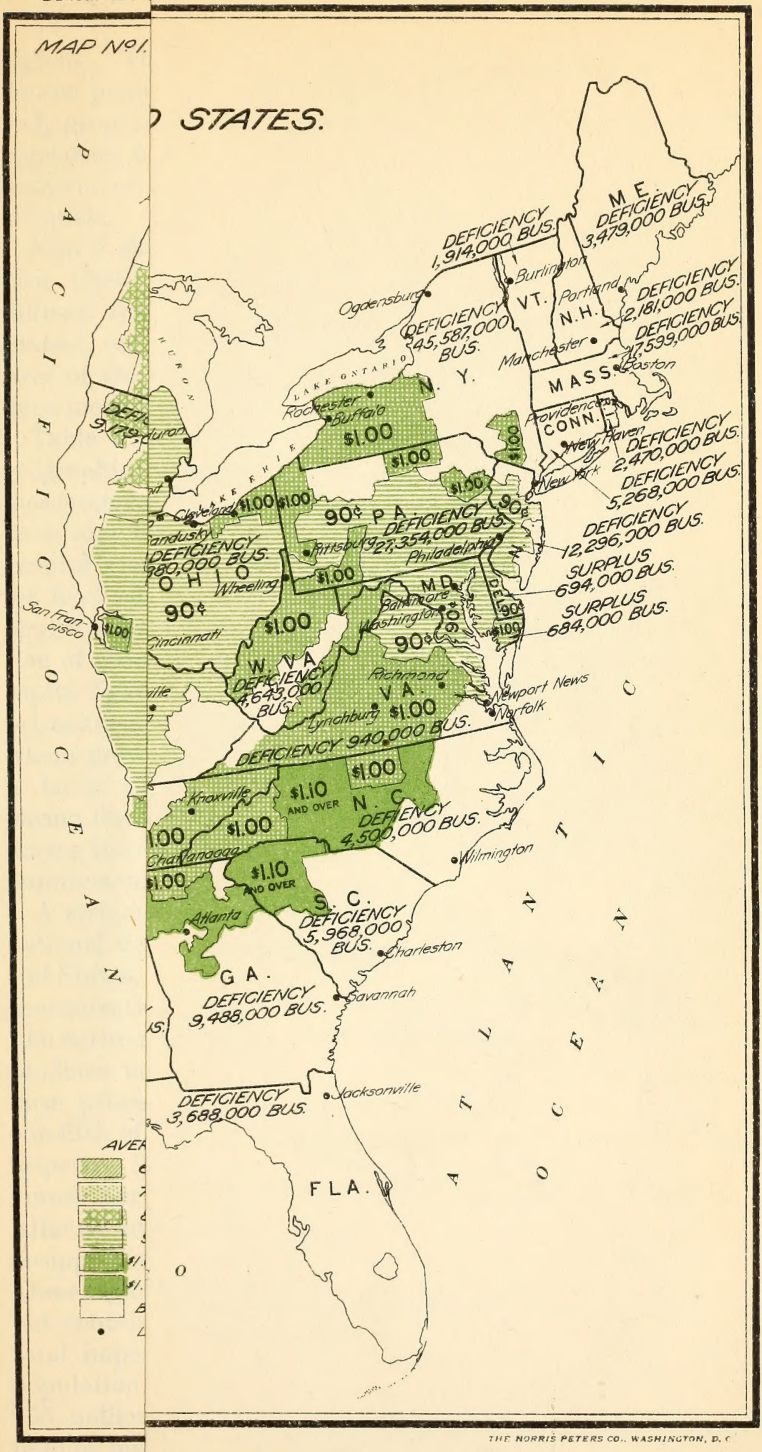
The region of lowest corn price is seen in the adjoining sections of Iowa, Nebraska, South Dakota, and Minnesota. From this area prices increase in every direction at a much more rapid rate than in the case of wheat and with much greater local variation. Within most States a consistent variation of at least 20 cents per bushel obtains in corn prices. From the region where corn is cheapest prices augment in the direction of the lowest wheat prices; that is, westward and northward, as well as to the other points of the compass, with highest corn prices in the southeast and southwest.

Although more widely diffused, oats are somewhat similar to wheat in being a northern crop. The lowest price areas, directly north of those of corn, are in western Minnesota and eastern North Dakota; from this area prices increase in every direction. The price accretions of oats are more notable toward the south, rather than east or west; and price differences are less marked, region by region.

PRINCIPAL CAUSES UNDERLYING PRICE DIFFERENCES.

Connection between wheat prices and movement of wheat from sparsely populated surplus areas to those of deficient production.
Population, wheat production, requirements, surplus or deficiency, wheat milled; general review.
Analysis of elements in distributive movement; by States and divisions.

In the price graduations of wheat the basic consideration appears in that, whereas wheat is destined for human consumption, wheat growing has been steadily relegated to the less densely populated



s direction of commercial

(NOTE—The difference in price between any two regions may be regarded as practically stable, regardless of changes in the prices themselves. This map serves as an index of geographic variation in farm prices.)

MAP No I.

WHEAT

GEOGRAPHIC PRICE VARIATIONS IN THE UNITED STATES.

WASH. 80¢ 70¢ SURPLUS 36,329,000 BUS. Seattle Tacoma Spokane

OREG. 80¢ 70¢ SURPLUS 11,275,000 BUS. Portland Salem

CAL. 90¢ $1.00 DEFICIENCY 9,179,000 BUS. San Francisco Los Angeles

NEV. 90¢ SURPLUS 425,000 BUS.

IDAHO 80¢ 70¢ 65¢ SURPLUS 10,719,000 BUS. Boise

MONT. 70¢ SURPLUS 10,728,000 BUS. Cascade Helena Butte

WYO. 80¢ 70¢ SURPLUS 780,000 BUS. Cheyenne

UTAH 90¢ 80¢ 70¢ SURPLUS 4,957,000 BUS. Ogden Salt Lake City

COLO. 90¢ 80¢ SURPLUS 3,499,000 BUS. Denver

ARIZ. 90¢ DEFICIENCY 909,000 BUS. Phoenix

N. MEX. 90¢ 80¢ DEFICIENCY 468,000 BUS. Albuquerque Santa Fe

N. DAK. 80¢ SURPLUS 68,210,000 BUS. Bismarck Fargo

S. DAK. 80¢ SURPLUS 26,865,000 BUS. Aberdeen Sioux Falls

NEBR. 80¢ 70¢ SURPLUS 41,436,000 BUS. Omaha Council Bluffs

KANS. 80¢ SURPLUS 74,048,000 BUS. Kansas City Wichita

OKLA. 90¢ 80¢ SURPLUS 10,229,000 BUS. Guthrie Oklahoma City

TEX. 95¢ $1.00 DEFICIENCY 12,382,000 BUS. Ft Worth Dallas San Antonio Houston Galveston

MINN. 90¢ 80¢ SURPLUS 35,315,000 BUS. DEFICIENCY 9,359,000 BUS. DEFICIENCY 1,639,000 BUS. Duluth Superior Minneapolis St Paul

IOWA 90¢ 80¢ DEFICIENCY 5,000 BUS. Dubuque Des Moines

MO. 90¢ SURPLUS 12,984,000 BUS. St Joseph St Louis

ILL. 90¢ 80¢ DEFICIENCY 1,196,000 BUS. Chicago Peoria

WIS. 90¢ Milwaukee

MICH. 90¢ Port Huron Detroit

IND. 90¢ SURPLUS 13,089,000 BUS. Indianapolis

OHIO 90¢ DEFICIENCY 4,380,000 BUS. Toledo Cleveland Sandusky Wheeling Cincinnati

KY. 90¢ DEFICIENCY 1,757,000 BUS. Louisville Lexington Cairo

TENN. 90¢ DEFICIENCY 1,419,000 BUS. Nashville Memphis Chattanooga Knoxville

ARK. DEFICIENCY 5,542,000 BUS. Little Rock

MISS. DEFICIENCY 7,804,000 BUS. Vicksburg

LA. DEFICIENCY 7,406,000 BUS. New Orleans

ALA. DEFICIENCY 8,595,000 BUS. Birmingham Mobile

GA. DEFICIENCY 9,488,000 BUS. Atlanta Savannah

FLA. DEFICIENCY 3,688,000 BUS. Jacksonville

S. C. DEFICIENCY 5,958,000 BUS. Charleston

N. C. DEFICIENCY 4,500,000 BUS. Wilmington

VA. $1.00 DEFICIENCY 940,000 BUS. Richmond Lynchburg Norfolk Newport News

W. VA. DEFICIENCY 4,643,000 BUS.

PA. 90¢ $1.00 DEFICIENCY 22,354,000 BUS. Philadelphia Pittsburgh

MD. 90¢ $1.00 Baltimore Washington

DEL. 90¢ $1.00

N. J. 90¢ $1.00 Trenton

N. Y. $1.00 DEFICIENCY 45,587,000 BUS. Buffalo Rochester Ogdensburg

DEFICIENCY 1,914,000 BUS.

VT. DEFICIENCY 2,181,000 BUS. Burlington

N. H. DEFICIENCY 1,599,000 BUS. Portland Manchester

ME. DEFICIENCY 3,479,000 BUS.

MASS. DEFICIENCY 2,470,000 BUS. Boston

CONN. DEFICIENCY 5,268,000 BUS. Providence New Haven

DEFICIENCY 12,296,000 BUS.

SURPLUS 694,000 BUS.

SURPLUS 684,000 BUS.

PACIFIC OCEAN

ATLANTIC OCEAN

GULF OF MEXICO

EXPLANATION

AVERAGE FARM PRICES PER BUSHEL

- 65¢ TO 69¢
- 70¢ - 79¢
- 80¢ - 89¢
- 90¢ - 99¢
- $1.00 - $1.09
- $1.10 AND OVER
- BLANKS REPRESENT AREAS OF LITTLE OR NO PRODUCTION (LESS THAN 500 ACRES TO THE COUNTY.)
- LEADING GRAIN CENTERS

CONDENSED MAP SHOWING

1. Farm prices per bushel. Average of 1910-1914 to show normal geographic variation.
2. Usual wheat surplus or deficiency by states, as evidenced by average of five years 1910-1914. Indicates direction of commercial wheat movement.
3. Points of largest wheat accumulation.

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regions. The flow of wheat is then from these areas to those of denser population and deficient supply. Price maps reflect regularly geographic relationship to this movement, the lowest prices appearing in the surplus-producing areas farthest from European markets or in those most unfavorably placed in the distributive channels.

Map 2 shows the distribution of wheat production in the census year 1909. It will be noted that while wheat raising is generally diffused from ocean to ocean (except in the southernmost tier of States), only certain States which may be roughly described as lying west of the Mississippi and north of the thirty-seventh parallel produce more than their requirements for food and seed.

Table I (p. 8) presents in condensed form data relating to the geographic price alignments of wheat. To obtain representative measurements a five-year average was employed (1911–1915). States have also been grouped by sections of the country to permit of a general view. Population, wheat production, wheat requirements for food and seed, and surplus or deficiency are given in absolute figures as well as percentages of the United States totals. The relation of production to population in each unit is indicated by the per capita figures. Commercial movement of wheat (with which farm prices are closely identified) is indicated by "shipments out of counties where grown;" and a rough characterization of this traffic, whether it be in the form of wheat or wheat flour, is obtained by comparing the census data regarding wheat ground in merchant mills during the calendar year 1914 with figures for production and average requirements.

A striking feature of this sectional grouping is the degree of the national dependence for wheat supplies upon the West North Central States, constituting about 17 per cent of the total area, and the concentration of production within a few States west of the Missisippi. The entire region east of the Mississippi, in addition to the southwest, produces much less wheat than it consumes. Here, too, the highest farm prices prevail. The North Atlantic States grow only about one-fifth of their requirements, comparing with Great Britain in this respect. Most notably deficient in production (showing also the lowest per capita consumption) is the territory comprised in the Atlantic and the Southern States (bounded by the Ohio and the Mississippi Rivers) and the West South Central section, 25 States in all. These regions grow only 16 per cent of the national wheat (1911–1915), but contain 56 per cent of the total farm lands, 49 per cent of the total improved land (1910 census), and 60 per cent of the total population. In round numbers they total: Wheat requirements, 305 million bushels; production, 129 million; and deficiency, 176 million bushels. To the wheat drawn here to supply this shortage

should be added an approximately equal quantity, on an average, going to the seaports for export, also less than 100 million bushels of Canadian wheat shipped in bond. The deficit would be considerably augmented by omitting Oklahoma with its production of 26 million and surplus of 12 million bushels. A total of the States raising insufficient wheat, regardless of sectional grouping, gives less than 19 per cent of the wheat production and 68 per cent of the population.

It is noteworthy that the merchant flour mills in the Atlantic and the Southern States mill over 25 per cent of the total wheat, as against 16 per cent of the wheat produced. These figures would be increased considerably by the addition of wheat ground in custom mills, particularly important in the South, but figures for which are not available. In this section the fraction which is shipped out of counties where grown is small, indicating that the bulk of the wheat raised is retained for local use and does not enter into trade channels.

The production in the East North Central States is about offset by the requirements; the single surplus State of Indiana brings up the average for the section, other States in this division usually being deficiency States.

The residual territory west of the Mississippi, embracing the surplus wheat areas, produces some 550 out of the total 800 million bushels, or about 69 per cent, though it has but 38 per cent of the farm lands and 20 per cent of the total population. In this surplus wheat region the vast area in the Mountain States, of which only about 2 per cent was improved in 1909, is as yet relatively unimportant as to surplus wheat, although developing at a rapid pace. The western surplus supplies the deficiency of the other sections as well as the bulk of the export wheat. A very small percentage is shipped via Canada, an increasing proportion moves toward the Gulf ports, and by far the larger part moves eastward, either milled en route or as wheat.

Figure 1 is added to throw into relief the proportionate significance of factors in the table discussed.

Reference to Table I will show that per capita wheat consumption declines as prices increase, ranging from 4 bushels per capita in some Southern States to 7.2 bushels in Montana and South Dakota.

Note.—Differences in price as shown or discussed in this bulletin are not intended to refer to present war conditions; they are based upon prices for the years 1910 to 1914.

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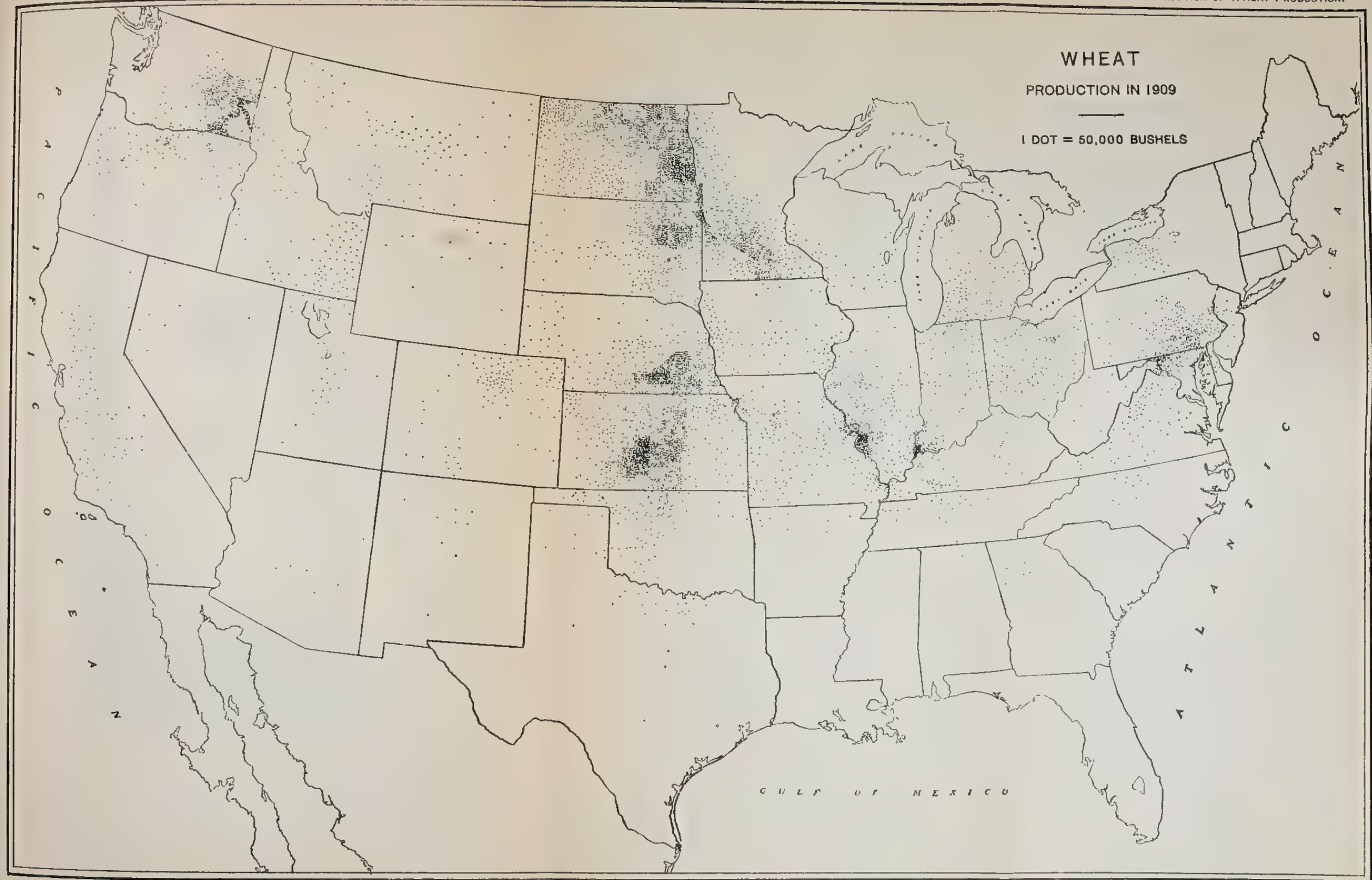
MAP 2. — GEOGRAPHICAL DISTRIBUTION OF WHEAT PRODUCTION.



Reproduced from Statistical Atlas of the United States, 1914 (Bureau of the Census).

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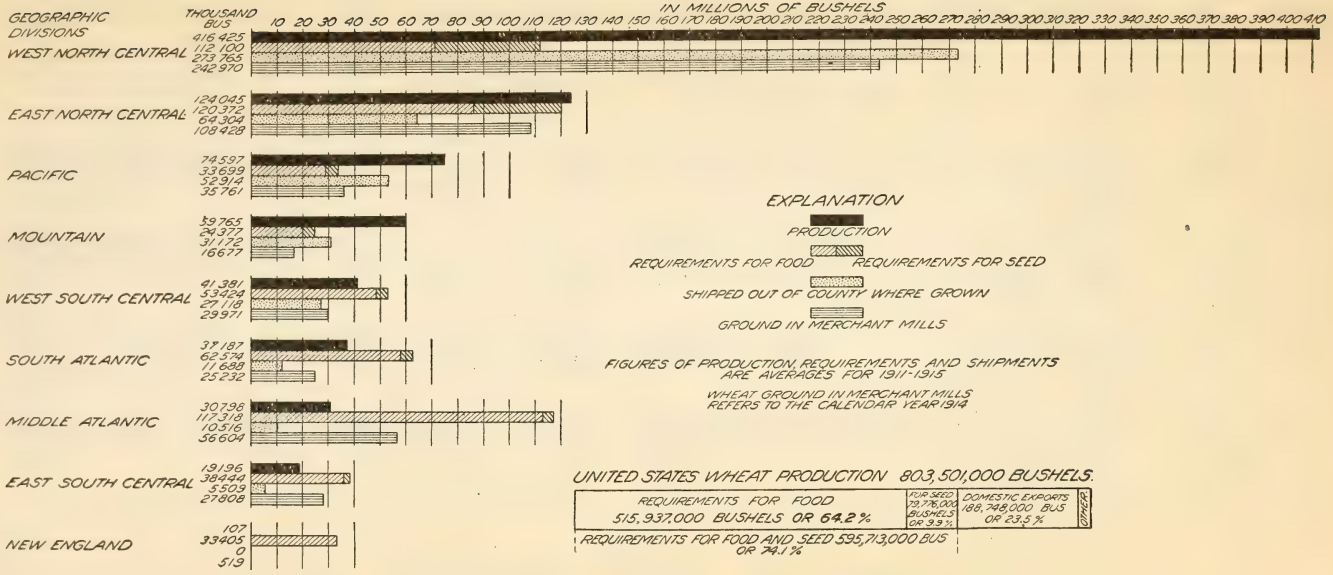


FIG. 1.—Wheat production, requirements, and trade movement, by geographic division.

TABLE I.—*Wheat: Basic elements in geographic price differences:*

State and geographic division.	Population July 1, 1913 (median of 1911–1915).	Production (average 1911–1915).	Wheat ground in merchant mills in 1914.[1]	Shipments out of county where grown (approximate commercial movement). Average 1911–1915.		Requirements, average, 1911–1915.	
						For food.	For food and seed.
	Thousands.	*Thousand bushels.*	*Thousand bushels.*	*Thousand bushels.*	*Per cent of production.*	*Thousand bushels.*	*Thousand bushels.*
United States	**97,163**	**803,501**	**543,970**	**476,986**	**59.4**	**515,937**	**595,713**
New England	6,865	107	519	(2)	(3)	33,245	33,405
Middle Atlantic	20,570	30,798	56,604	10,516	34.1	113,223	117,318
South Atlantic[5]	12,764	37,187	25,232	11,688	31.4	58,448	62,574
East North Central	18,987	124,045	108,428	64,304	51.8	107,347	120,372
West North Central	12,057	416,425	242,970	273,765	65.7	71,237	112,100
East South Central	8,690	19,196	27,808	5,509	28.7	36,151	38,444
West South Central	9,516	41,381	29,971	27,118	63.5	48,656	53,424
Mountain	2,945	59,765	16,677	31,172	52.2	18,939	24,377
Pacific	4,769	74,597	35,761	52,914	70.9	28,691	33,699
New England:							
Maine	758	80	44	(2)	(3)	3,562	3,574
New Hampshire	437	.....	402	(2)	(3)	2,184	2,189
Vermont	360	27	15	(2)	(3)	1,944	1,946
Massachusetts	3,549	.....	57	(2)	(3)	17,744	17,838
Rhode Island	579	.....	.....	(2)	(3)	2,493	2,511
Connecticut	1,182	.....	1	(2)	(3)	5,318	5,347
Middle Atlantic:							
New York	9,713	7,348	36,427	2,465	33.5	52,450	53,513
New Jersey	2,749	1,463	833	412	28.2	13,747	14,028
Pennsylvania	8,108	21,987	19,344	7,639	34.7	47,026	49,777
South Atlantic:							
Delaware	208	1,936	735	1,112	57.4	1,040	1,271
Maryland	1,330	9,981	5,310	5,971	59.8	6,651	9,070
Virginia	2,129	11,295	10,232	3,618	32.0	9,581	11,003
West Virginia	1,306	3,442	2,535	512	14.9	7,446	7,935
North Carolina	2,308	7,345	4,703	366	5.0	10,385	11,333
South Carolina	1,572	1,199	190	18	1.5	6,760	6,950
Georgia	2,737	1,989	1,617	91	4.6	10,947	11,242
Florida	826	.....	.....	.....	.....	3,714	3,770
East North Central:							
Ohio	4,965	31,566	27,780	14,551	46.1	31,281	34,941
Indiana	2,761	34,950	21,200	19,116	54.7	15,737	19,479
Illinois	5,904	38,631	31,021	22,600	58.5	33,063	36,799
Michigan	2,937	15,198	14,621	7,154	47.1	14,683	16,187
Wisconsin	2,420	3,700	13,806	883	23.9	12,583	12,966
West North Central:							
Minnesota	2,181	59,081	124,339	35,969	60.9	15,704	21,982
Iowa	2,222	14,098	7,118	9,159	65.0	11,779	13,215
Missouri	3,354	35,377	25,278	17,626	49.8	17,441	20,813
North Dakota	661	105,887	10,397	73,970	69.9	4,758	14,502
South Dakota	643	39,258	4,488	26,938	68.6	4,180	9,078
Nebraska	1,233	59,844	11,405	40,126	67.1	7,152	11,884
Kansas	1,763	102,880	59,945	69,977	68.0	10,223	20,626
East South Central:							
Kentucky	2,336	9,813	13,114	2,892	29.5	10,513	11,650
Tennessee	2,238	8,789	14,579	2,575	29.3	9,176	10,168
Alabama	2,239	528	115	27	5.1	8,954	9,077
Mississippi	1,877	66	.....	15	22.7	7,508	7,549
West South Central:							
Louisiana	1,745	.....	.....	.....	.....	7,855	7,907
Texas	4,172	13,637	18,979	7,477	54.8	22,529	24,099
Oklahoma	1,939	26,217	9,591	19,366	73.9	11,633	14,533
Arkansas	1,660	1,527	1,401	275	18.0	6,639	6,885
Mountain:							
Montana	419	20,900	4,143	13,025	62.3	2,515	5,284
Wyoming	163	2,366	492	490	20.7	1,029	1,248
Colorado	883	10,709	5,738	5,558	51.9	5,300	6,107
New Mexico	370	1,542	291	304	19.7	2,924	3,061
Arizona	231	879	386	79	9.0	1,662	1,740
Utah	405	6,601	2,525	2,221	33.6	2,469	2,951
Nevada	95	1,246	193	262	21.0	578	676
Idaho	379	15,522	2,909	9,233	59.5	2,462	3,310
Pacific:							
Washington	1,345	49,985	17,567	37,749	75.5	8,068	10,940
Oregon	757	18,018	8,639	11,339	62.9	4,618	6,007
California	2,667	6,594	9,555	3,826	58.0	16,005	16,752
United States	97,163	803,501	543,970	476,986	59.4	515,937	595,713
Net surplus	.....	.....	.....	.....	.....	.....	.....
Exports (domestic wheat) average 1911–1915	.....	.....	.....	.....	.....	.....	.....

[1] From census of manufactures, calendar year 1914. Grain ground in custom mills is not included. The figures indicate roughly the trade movement, wheat versus wheat flour.
[2] Less than 500 bushels.

population, production, requirements, and indicated trade movement.

Average surplus or deficiency, 1911–1915.		Per capita.			Distribution in percentages of the United States totals.			State and geographic division.
			Requirements.					
Surplus.	Deficiency.	Production.	For food.	For food and seed.	Population.	Production.	Requirements for food and seed.	
Thousand bushels.	*Thousand bushels.*	*Bushels.*	*Bushels.*	*Bushels.*	*Per cent.*	*Per cent.*	*Per cent.*	
207,788		**8.3**	**5.31**	**6.13**	**100**	**100**	**100**	**United States.**
	33,298	(4)	4.8	4.9	7.1	(3)	5.6	New England.
	86,520	1.5	5.5	5.7	21.2	3.8	19.7	Middle Atlantic.
	25,387	2.9	4.6	4.9	13.1	4.6	10.5	South Atlantic.[5]
3,673		6.5	5.7	6.3	19.5	15.4	20.2	East North Central.
304,325		34.5	5.9	9.3	12.4	51.8	18.8	West North Central.
	19,248	2.2	4.2	4.4	9.0	2.4	6.4	East South Central.
	12,043	4.3	5.1	5.6	9.8	5.2	9.0	West South Central.
35,388		20.3	6.4	8.3	3.0	7.5	4.1	Mountain.
40,898		15.6	6.0	7.1	4.9	9.3	5.7	Pacific.
								New England:
	3,494	.1	4.7	4.7	.8	(3)	.6	Maine.
	2,189	(4)	5.0	5.0	.4	(3)	.4	New Hampshire.
	1,919	.1	5.4	5.4	.4	(3)	.3	Vermont.
	17,838	(4)	5.0	5.0	3.7	(3)	3.0	Massachusetts.
	2,511	(4)	4.3	4.3	.6	(3)	.4	Rhode Island.
	5,347	(4)	4.5	4.5	1.2	(3)	.9	Connecticut.
								Middle Atlantic:
	46,165	.8	5.4	5.5	10.0	.9	9.0	New York.
	12,565	.5	5.0	5.1	2.8	.2	2.3	New Jersey.
	27,790	2.7	5.8	6.1	8.4	2.7	8.4	Pennsylvania.
								South Atlantic:
665		9.3	5.0	6.1	.2	.2	.2	Delaware.
911		7.5	5.0	6.8	1.4	1.2	1.5	Maryland.
292		5.3	4.5	5.2	2.2	1.4	1.9	Virginia.
	4,493	2.6	5.7	6.1	1.3	.4	1.3	West Virginia.
	3,988	3.2	4.5	4.9	2.4	.9	1.9	North Carolina.
	5,751	.8	4.3	4.4	1.6	.2	1.2	South Carolina.
	9,253	.7	4.0	4.1	2.8	.3	1.9	Georgia.
	3,770	(4)	4.5	4.6	.8	(3)	.6	Florida.
								East North Central.
	3,375	6.4	6.3	7.0	5.1	3.9	5.8	Ohio.
15,471		12.7	5.7	7.1	2.8	4.3	3.3	Indiana.
1,832		6.5	5.6	6.2	6.1	4.8	6.2	Illinois.
	989	5.2	5.0	5.5	3.0	1.9	2.7	Michigan.
	9,266	1.5	5.2	5.4	2.5	.5	2.2	Wisconsin.
								West North Central:
37,099		27.1	7.2	10.1	2.2	7.4	3.7	Minnesota.
883		6.3	5.3	5.9	2.3	1.8	2.2	Iowa.
14,564		10.5	5.2	6.2	3.4	4.4	3.5	Missouri.
91,385		160.2	7.2	21.9	.7	13.1	2.4	North Dakota.
30,180		61.1	6.5	14.1	.7	4.9	1.5	South Dakota.
47,960		48.5	5.8	9.6	1.3	7.4	2.0	Nebraska.
82,254		58.4	5.8	11.7	1.8	12.8	3.5	Kansas.
								East South Central:
	1,837	4.2	4.5	5.0	2.4	1.2	1.9	Kentucky.
	1,379	3.9	4.1	4.5	2.3	1.1	1.7	Tennessee.
	8,549	.2	4.0	4.1	2.3	.1	1.5	Alabama.
	7,483	(4)	4.0	4.0	2.0	(3)	1.3	Mississippi.
								West South Central:
	7,907	(4)	4.5	4.5	1.8	(3)	1.3	Louisiana.
	10,462	3.3	5.4	5.8	4.3	1.7	4.1	Texas.
11,684		13.5	6.0	7.5	2.0	3.3	2.4	Oklahoma.
	5,358	.9	4.0	4.1	1.7	.2	1.2	Arkansas.
								Mountain:
15,616		49.9	6.0	12.6	.4	2.6	.9	Montana.
1,118		14.5	6.3	7.6	.2	1.9	.2	Wyoming.
4,602		12.1	6.0	6.9	.9	.3	1.0	Colorado.
	1,519	4.2	7.9	8.3	.4	1.4	.5	New Mexico.
	861	3.8	7.2	7.5	.2	.2	.3	Arizona
3,650		16.3	6.1	7.3	.4	.1	.5	Utah.
570		13.1	6.1	7.1	.1	.8	.1	Nevada.
12,212		41.0	6.5	8.7	.4	.2	.6	Idaho.
								Pacific:
39,045		37.2	6.0	8.1	1.4	6.2	1.9	Washington.
12,011		23.8	6.1	7.9	.8	2.2	1.0	Oregon.
	10,158	2.5	6.0	6.3	2.7	.9	2.8	California.
[6]424,004	[6]216,216	8.3	5.31	6.13	100	100	100	United States.
207,788								Net surplus.
188,748								Exp'ts (domestic wheat) average 1911–1915.

[3] Less than one-tenth of 1 per cent.
[4] Less than one-tenth of 1 bushel.
[5] Includes the District of Columbia.
[6] Gross surplus and deficiency.

New England States.—This section is almost completely dependent for its wheat supplies upon shipments from the West. The small quantity of wheat ground indicates that practically the entire deficit is supplied in the form of wheat flour. The movement to this division consists not only of some 33 million bushels required for its consumption, but includes also an additional 25 million bushels of wheat exported from its seaports, less than 3 million bushels more in the form of wheat flour, and a few million bushels of Canadian transit wheat.

Middle Atlantic States.—The dominating influence of the three States in this section is shown by the fact that half the gross surplus of the country is drawn here for consumption and export, as well as millions of bushels of Canadian wheat. The section contains the largest population but produces scarcely one-fourth of its requirements for food and seed. Only a third of its production enters into the shipments out of counties where grown, indicating local consumption for seed, in custom mills, etc. Its flour mills grind about twice the quantity of wheat produced. Shipments to this group of States, supplying a deficit of 117 million bushels, are augmented by 50 million bushels in the form of wheat flour and 65 million bushels of wheat for export, chiefly via New York; also by nearly 50 million bushels of Canadian wheat, shipped in bond.

South Atlantic States.—The requirements are about double the local production. Virginia and Maryland produce about 60 per cent of the wheat in the eight States of this section and bring up the average. The small fraction of the crop shipped out of counties where grown suggests local consumption for seed and in custom flour mills, no data for the latter being available. Wheat ground in merchant mills is less than production. The two northern ports in this section, Baltimore and Newport News, draw in addition about 20 million bushels for export.

East South Central States.—The two States of Kentucky and Tennessee produce practically all of the wheat in this division, and also mill nearly all of the product that enters into merchant mills. As a section, the figures show production equal to half of the requirements; the small percentage of shipments out of counties where grown indicates local consumption and use in custom mills. The wheat flow to this section is largely in the form of wheat flour. Very little wheat is exported from its ports.

West South Central States.—Oklahoma produces nearly 60 per cent of the crop of this section, and the small percentage which is ground in Oklahoma merchant mills indicates its shipment unmilled. The section considered in its entirety raises about 80 per cent of its requirements for food and seed. The trade current to this group supplies a net deficit of some 12 million bushels and includes some 35 million bushels of wheat and 7 million bushels equivalent of wheat

flour, moving to New Orleans and Galveston for export. The export movement through the Gulf ports is increasing rapidly.

East North Central States.—The figures for Indiana in the production column bring up production to about an equality with the requirements. Wisconsin grinds several times its production, the other States less than their production.

West North Central States.—This is the great surplus wheat area, growing 51.8 per cent of the national wheat, or 416 out of 803 million bushels, with only 12 per cent of the national population and 17 per cent of the land area—or less than four times the requirements for food and seed. North Dakota (160 bushels per capita) and Kansas (58 bushels per capita) contribute about 60 per cent of the wheat grown in the seven States of this section, which supplies not only the greater part of the domestic deficiencies east of the Rockies, but also most of the export wheat. Deducting the Pacific wheat, which normally enters into a distinct trade westward, this division furnishes nearly 80 per cent of the gross surplus of the United States. The one State of Minnesota grinds more than half of the wheat milled in this area—several times the State production. The aggregate figures suggest an export movement of wheat and wheat flour in about equal proportions.

Mountain States.—The per capita production in these States is very high; only in Montana and Idaho, however, does the local production attain relative importance. The southern part of the division grows insufficient wheat for its needs. Population and wheat production are widely scattered, and the region is still in a developmental state, the census of 1910 reporting only 2 per cent of its area as being improved. Only a small proportion of the export wheat is milled, part moving westward and the major portion finding its way to markets east of the Rockies.

Pacific States.—The bulk of the Pacific wheat production is concentrated in eastern Washington and northeastern Oregon, as will be seen from Map 2. California's production has declined to a fraction of the State's requirements. The surplus wheat from eastern Washington and Oregon, with some from adjoining Mountain States, supplies deficiencies in this section, the major part seeking a market in Europe and the Orient. Pacific mills grind less than half the local crop, surplus wheat being shipped, as a rule, unmilled.

SECTIONAL PRICE RATIOS SHIFTING.

Price maps based upon averages for five years, 1910–1914, to determine normal conditions.

Geographic price differences change slowly with economic transformations.

Spasmodic deviations from usual price relationships due to unusual local conditions.

Application to specific purposes of the maps and local price alignments to which attention is now addressed is in a measure contingent

upon an understanding of the data upon which they are based. Emphasis is laid upon the fact that the price zones as mapped and given in tabular form within the appendix represent normal conditions determined by a five-year average (1910–1914), showing regular and definable tendencies, both general and local.

These geographic price differences are not fixed; they are slowly changing with other economic conditions. This phase is more fully treated on pages 24–27, wherein are shown the steadily diminishing price differences in wheat between exporting western and importing eastern sections, coincident with the decline in transportation charges, attended also by a decreasing wheat production in the East. Similarly, marked changes occurred in Mountain States disadvantageously situated as to markets, in which formerly—when deficient in wheat supplies—very high prices prevailed, and where now there are low prices, since these States have eventually come to produce a surplus of wheat.

Subordinate to the general price movement, temporary deviations from the usual price relationships are found. A local crop failure may occur, or the crop may be of poor quality, and a region, usually exporting, must bring in supplies. The Kansas corn crop was practically a failure in 1913, because of a severe drought; large quantities of corn had to be brought in for local needs. As a result, the farm price ratios were disrupted, the Kansas farm price becoming considerably higher than that of adjoining States, even exceeding that of Pennsylvania, although usually about 10 cents per bushel less. (See fig. 2.)

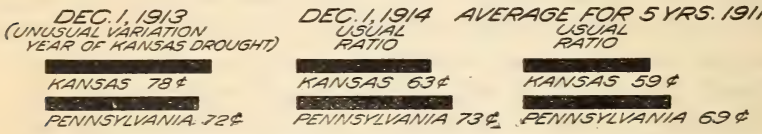


FIG. 2.—Usual and unusual farm-price ratio per bushel of corn, Kansas and Pennsylvania.

A very striking illustration of deviation from the usual sectional farm price ratio is afforded by the situation in the Pacific Coast States in 1916. The Pacific wheat surplus could not follow its usual course to Europe because of the scarcity of ocean tonnage, hence it was shipped by rail to eastern markets. The ordinary price progression of the far western States gives higher prices as the Pacific ports are reached; Idaho and Montana, at a geographical disadvantage to eastern and Pacific markets, represent areas of lowest price. Because of the eastward rail movement in 1916 the geographic situation was reversed, and Montana wheat brought higher farm prices; similarly, the price disparity between Pacific and eastern surpluses was widened, the higher rail freight being substituted for cheaper ocean rates. (See fig. 3.)

Notwithstanding the apparently bewildering lack of regularity in the individual price quotations, the application of statistical method to the great mass of numerical data which have been made the basis of the maps, and the use of a 5-cent unit to overcome minor differences such as are due to grades, develop a sustained regularity in the geographic price comparisons. The regional differences in farm prices reflect current economic conditions; they are changing slowly with the development of the country; subordinate to this general movement spasmodic deviations arise.

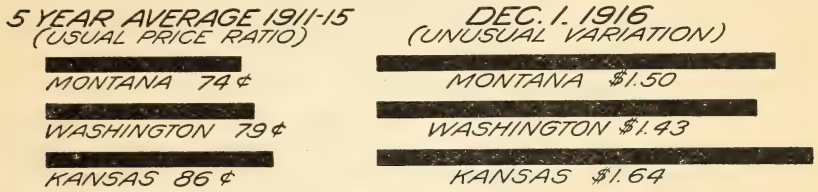


FIG. 3.—Deviation from usual farm-price ratio, per bushel of wheat, Montana, Washington, and Kansas.

DETAIL FARM PRICE MAP AND LOCAL PRICE CONDITIONS.

Stability of farm prices where wheat traffic is in great volume, across Northern States.

Mountainous regions and areas disadvantageously placed as to transportation facilities; irregularity of prices therein; surplus wheat areas show lowest prices; deficient areas highest prices.

Map 3 is designed to show local variations in the general price zones through the use of a 5-cent unit.

Previous paragraphs have treated of the general direction of the price progressions. An examination of the price maps will disclose many small areas in which farm prices are higher or lower than in the surrounding territory. Greatest stability and slowest rate of increase attend the direction wherein grain traffic is in largest volume—across the Mississippi, through Illinois and Ohio, toward the North Atlantic ports. Similarly, in the Pacific northwest, price levels rise steadily toward the seaboard. On the other hand, prices paid to farmers reach higher and more irregular levels within the arid interior and southwest, sections deficient in wheat production, with scanty population, having no points of large concentration, and drawing wheat in relatively small quantities. High figures usually obtain in regions of little or no wheat production. It will be noted that in importing areas—as in the Appalachian region—not well served by transportation facilities, prices are high and irregular. Surplus areas not favorably situated as to transportation and markets show lowest farm prices, notwithstanding proximity to areas of higher prices, as will be seen in parts of Idaho and Colorado.

EFFECT OF MARKETS ON LOCAL FARM PRICE VARIATIONS.

Price elevations around wheat markets; influence of markets on farm price gradations; large wheat consumption of grain centers.

Wheat receipts, shipments, exports, and flour production at chief markets in relation to total commercial movement.

Consideration of price zones in connection with the great wheat markets located on Map 3 will indicate the relationship between grain centers and farm prices. In a report of the Industrial Commission [1] the grain territory tributary to the leading markets was mapped. In Map 4 this map is reproduced with the price zones of Map 3 superimposed. The effect on farm prices of proximity to the great wheat markets is apparent. On the north farm prices rise to a maximum around Minneapolis; slightly farther south they graduate upward toward Chicago and Milwaukee. Likewise, subordinate to the general price direction, higher levels obtain around Kansas City, St. Louis, San Francisco, and other important markets. Reports indicate that sections deficient in supply, east and south, draw the greater part of their wheat from these "primary markets"—the points in which wheat is concentrated in the first stages of its movement. Each of the markets has a territory from which it usually derives its wheat, freight rates being the determining factor, and farm prices tend to graduate in proportion thereto. A difference of a fraction of a cent in freight, elevating charges, etc., will alter the course of the wheat traffic.

The great wheat markets are important, not only as commercial centers and points of wheat concentration, but also as eventually consuming a large part of the domestic wheat. A score of the largest markets represent about one-fifth of the total consumption of the country. It is estimated that the metropolitan district of New York consumes 30 million bushels annually—equal to the entire production of the Middle Atlantic States or the average surplus of South Dakota. A few of the western primary markets are simply reshipping points, with little local consumption.

In Table II (p. 15) data have been assembled explanatory of the importance of the markets on geographic phases of farm prices of wheat. It will be noted that 13 primary markets receive some 481 million bushels of wheat and wheat flour. Comparing with the figures in Table I, the North Central States (in which these markets are located) grow 540 million bushels, with shipments out of counties where grown aggregating 337 million. Allowing for considerable duplication and inaccuracies in reports of receipts, the degree of concentration is evident. Exclusive of the Canadian shipments, Buffalo alone handles somewhat less than one-fifth of the total wheat production of the country and the major part of the wheat

[1] Report of the Industrial Commission, Vol. VI.

destined for the east and northeast. In six Atlantic and Gulf seaports, receipts total one-half of the wheat east of the Rockies entering into commercial channels. To this should be added about 60 million bushels of Canadian wheat and wheat flour shipped in bond via Atlantic ports. A dozen cities around the Great Lakes mill one-fourth of the total wheat flour.

TABLE II.—*Leading wheat markets: Receipts, shipments, and flour production, in five-year averages (1911–1915).*

[Taken from unofficial returns. Figures for some markets are incomplete; allowance must also be made for duplication, intermediate markets crediting themselves with through shipments, etc.]

(In figure columns 000 omitted.)

Principal wheat markets.	Wheat.			Wheat flour.			Wheat and wheat flour.[1]	
	Receipts.	Disposition.		Receipts.	Production.	Shipments.	Receipts.	Shipments.
		Milled.[1]	Reshipped.					
EASTERN AND SOUTHERN SHIPMENTS.								
Primary markets:	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*	*Barrels.*	*Barrels.*	*Bushels.*	*Bushels.*
Minneapolis	116,056	77,724	34,445	665	17,272	17,776	119,049	114,437
Duluth	65,453	4,851	60,684	5,274	1,078	6,356	89,186	89,284
(Canadian shipments in bond)[2]	(6,828)	.....	(6,676)	*	.....	*	(6,828)	(6,676)
Chicago	58,680	4,694	49,222	8,394	1,043	6,671	96,453	79,243
Kansas City	46,549	10,292	34,528	193	2,287	1,929	47,417	43,208
St. Louis	29,529	5,643	22,463	3,290	1,254	3,806	44,344	39,588
Milwaukee	8,892	3,812	4,861	3,320	847	3,641	23,832	21,245
Omaha	16,964	*	11,079	*	*	*	16,964	11,079
Cincinnati	4,433	*	3,185	1,501	*	1,095	11,187	8,113
Toledo	6,856	6,278	3,925	*	1,395	*	6,856	3,925
Cleveland	2,939	1,476	961	696	328	168	6,071	1,717
Detroit	2,235	3,298	1,066	346	733	396	3,792	2,848
Indianapolis	3,194	2,151	1,140	*	478	*	3,194	1,140
Peoria	2,390	*	2,269	2,363	*	2,900	13,023	15,319
Total	364,180	120,219	229,828	26,042	26,715	44,738	481,368	431,146
Other markets:								
Buffalo—								
Domestic wheat	[3]111,392	24,314	*	[3]8,330	5,403	*	148,877	*
Canadian shipments in bond	46,497	.....	.....	.....	.....	.....	46,497	.....
New York—								
Domestic wheat	55,444	4,842	[4]48,120	10,102	1,076	[4]4,929	100,903	[4]70,300
Canadian shipments in bond	24,000	.....	.....	972	.....	.....	28,374	.....
Philadelphia—								
Domestic wheat	22,694	2,826	[4]19,445	2,385	628	[4]1,056	33,426	[4]24,197
Canadian shipments in bond	8,820	.....	.....	197	.....	.....	9,706	.....
Baltimore—								
Domestic wheat	21,752	*	[4]19,950	1,920	*	[4]930	30,392	[4]24,135
Canadian shipments in bond	8,040	.....	.....	54	.....	.....	8,283	.....
Boston—								
Domestic wheat	14,273	*	[4]14,391	1,961	*	[4]668	23,097	[4]17,397
Canadian shipments in bond	10,490	.....	.....	284	.....	.....	11,768	.....
New Orleans	18,005	*	[4]16,886	2,087	*	[4]1,362	27,397	[4]23,015
Newport News and Norfolk	.....	.....	[4]3,159	.....	.....	[4]218	.....	[4]4,140
Galveston	19,818	*	18,107	.....	*	297	19,818	19,443

* No reports.
[1] Flour converted to wheat at 4½ bushels per barrel.
[2] Canadian shipments in bond are in addition to other figures.
[3] Lake receipts only.
[4] Exports.

TABLE II.—*Leading wheat markets: Receipts, shipments, and flour production, in five-year averages (1911–1915)*—Continued.

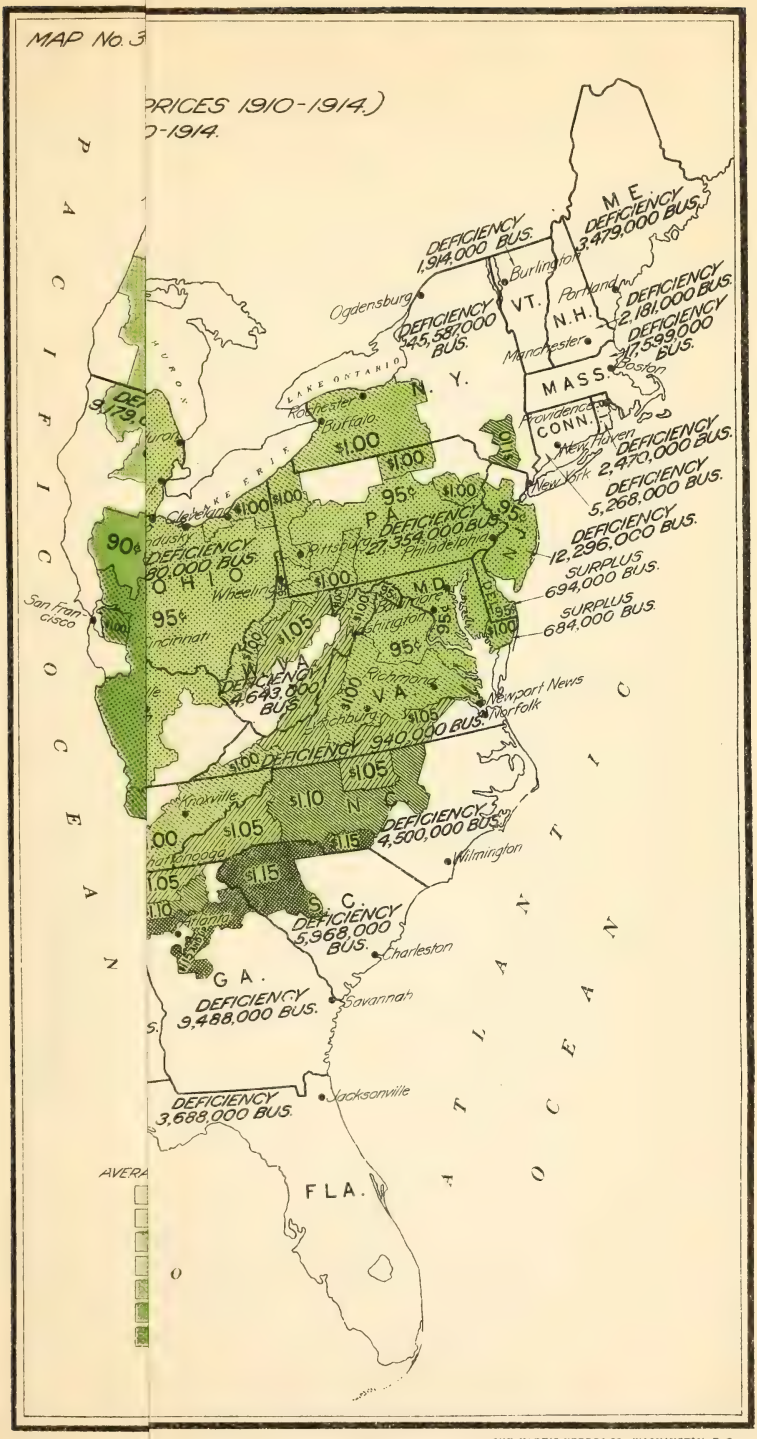
Principal wheat markets.	Wheat.			Wheat flour.			Wheat and wheat flour.	
	Receipts.	Disposition.		Receipts.	Production.	Shipments.	Receipts.	Shipments.
		Milled.	Reshipped.					
EASTERN AND SOUTHERN SHIPMENTS—continued.								
Other markets—Continued.								
Portland, Me.—	*Bushels.*	*Bushels.*	*Bushels.*	*Barrels.*	*Barrels.*	*Barrels.*	*Bushels.*	*Bushels.*
Domestic wheat	*	.....	[1] 7,887	.....	.....	[1] 143	.....	[1] 8,531
Canadian shipments in bond	7,074	*	*	197	*	*	7,960	.....
Mobile	.....	.....	[1] 31	.....	.....	[1] 533	.....	[1] 2,429
Louisville	5,035	[2] 5,670	135	[2] 144	[2] 1,260	[2] 1,108	5,683	5,121
Denver	3,316	.....	.....	.....	.....	.....	3,316	.....
PACIFIC COAST WHEAT.								
Seattle [3]	9,349	5,020	4,678	548	1,049	1,243	11,815	10,271
Tacoma [3]	11,902	6,044	4,600	*	1,343	1,496	11,902	11,332
San Francisco	6,215	*	[1] 248	1,260	.....	[1] 210	11,885	[1] 1,193
Portland [2]	17,419	.....	13,853	496	.....	997	19,651	18,339
Spokane [2]	1,334	.....	.....	.....	.....	.....	1,334	.....

* No reports. [1] Exports. [2] Figures for 1915 only. [3] Averages for 1912–1915.

FREIGHT RATES.

Most important element in price disparities represented by transportation costs.
Export prices of wheat influence farm prices.
Wheat takes a special rate; complicated rate structure; effect of reshipping, distance, and milling-in-transit rates on farm prices.

The national wheat surplus, that is, the exports, constituted during the past 10 years, from 11 to 37 per cent of the production. It is the price received for this surplus which, broadly stated, tends to regulate the farm prices of the entire crop. Preceding maps have outlined the gradual elevation in the farm prices of wheat toward the seaboard, with minor increases culminating as each of the great markets is reached. In this progression a preponderant factor is cost of transportation, other items of distributive expense being usually in fractions of 1 cent per bushel. Evidently a definite proportion tends to exist between prices prevailing at the different markets, domestic and foreign, measured principally by differences in freight. In foreign markets tariffs often supervene to disturb this relationship. Prices paid to farmers for wheat tend to graduate from the markets in proportion to freight charges thereto. In surplus wheat areas farm prices decrease steadily with distance from markets, while in areas raising insufficient wheat for home needs prices are apt to be higher than they are near large markets, the increase in price being affected by freight rates from the nearest surplus points.



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(NOTE—The difference in price between any two regions may be regarded as practically stable, regardless of changes in the prices themselves. This map serves as an index of geographic variation in farm prices.)

MAP No 3

WHEAT

GEOGRAPHIC VARIATIONS IN PRODUCERS' PRICE (AVERAGE PRICES 1910-1914.)

WHEAT SURPLUS AND DEFICIENCY FIGURES ARE STATE AVERAGES FOR 1910-1914.

WASH. SURPLUS 36,759,000 BUS. 80¢ 75¢
OREG. SURPLUS 11,225,000 BUS. 85¢ 80¢ 75
CALIF. DEFICIENCY 9,179,000 BUS. 85¢ 80¢ 90¢ 95¢ $1.00
NEV. SURPLUS 425,000 BUS. 90¢
IDAHO SURPLUS 10,712,000 BUS. 80¢ 75¢ 70¢ 65¢
MONT. SURPLUS 10,728,000 BUS. 75¢ 70¢
WYO. SURPLUS 780,000 BUS. 80¢ 75¢
UTAH SURPLUS 2,957,000 BUS. 90¢ 85¢ 80¢ 75¢
ARIZ. DEFICIENCY 909,000 BUS. 95¢ 90¢
COLO. SURPLUS 3,899,000 BUS. 90¢ 85¢ 80¢ 75¢
N. MEX. DEFICIENCY 1,687,000 BUS. 95¢ 90¢ 85¢
N. DAK. SURPLUS 68,210,000 BUS. 85¢ 80¢
S. DAK. SURPLUS 26,865,000 BUS. 85¢ 80¢
NEBR. SURPLUS 41,436,000 BUS. 85¢ 80¢ 75¢
KANS. SURPLUS 74,048,000 BUS. 90¢ 85¢ 80¢
OKLA. SURPLUS 10,229,000 BUS. 95¢ 90¢ 85¢
TEX. DEFICIENCY 12,382,000 BUS. 95¢
MINN. SURPLUS 35,315,000 BUS. DEFICIENCY 1,639,000 BUS. DEFICIENCY 9,359,000 BUS. 90¢ 85¢
IOWA DEFICIENCY 5,000 BUS. DEFICIENCY 1,195,000 BUS. 90¢ 85¢
MO. SURPLUS 12,984,000 BUS. 95¢ 90¢
ARK. DEFICIENCY 5,542,000 BUS. 95¢ 90¢
LA. DEFICIENCY 7,804,000 BUS.
WIS. 90¢ 85¢
ILL. 90¢ 85¢
MICH. 90¢
IND. SURPLUS 13,089,000 BUS. 95¢ 90¢
OHIO DEFICIENCY 4,380,000 BUS. 95¢
KY. DEFICIENCY 1,757,000 BUS. 95¢
TENN. DEFICIENCY 1,419,000 BUS. 95¢
MISS. DEFICIENCY 7,406,000 BUS.
ALA. DEFICIENCY 8,595,000 BUS.
W. VA. DEFICIENCY 4,643,000 BUS. $1.00
PA. DEFICIENCY 27,354,000 BUS. $1.00 95¢
N. Y. DEFICIENCY 1,914,000 BUS. DEFICIENCY 45,587,000 BUS. $1.00 95¢
VT DEFICIENCY 3,479,000 BUS.
N. H. DEFICIENCY 2,181,000 BUS.
MASS. DEFICIENCY 17,599,000 BUS.
CONN. DEFICIENCY 2,470,000 BUS.
MD. DEFICIENCY 5,268,000 BUS. $1.00 95¢
DEL. DEFICIENCY 12,296,000 BUS. $1.00
N. J. SURPLUS 694,000 BUS. SURPLUS 684,000 BUS. $1.00 95¢
VA. DEFICIENCY 940,000 BUS. $1.05 $1.00
N. C. DEFICIENCY 4,500,000 BUS. $1.10 $1.05
S. C. DEFICIENCY 5,968,000 BUS. $1.15 $1.05
GA. DEFICIENCY 9,488,000 BUS. $1.15 $1.10 $1.05
FLA. DEFICIENCY 3,688,000 BUS.

Seattle, Tacoma, Spokane, Ft. Lewis, Cascade, Helena, Butte, Bismarck, Fargo, Aberdeen, Minneapolis, St. Paul, Sioux Falls, Cheyenne, Omaha, Council Bluffs, Denver, Salt Lake City, Kansas City, St. Joseph, Wichita, Duluth, Superior, Dubuque, Des Moines, Peoria, Milwaukee, Chicago, Detroit, Toledo, Sandusky, Cleveland, Wheeling, Indianapolis, Cincinnati, Evansville, Louisville, Lexington, St. Louis, Nashville, Memphis, Little Rock, Vicksburg, Birmingham, Atlanta, Charleston, Wilmington, Norfolk, Newport News, Richmond, Lynchburg, Roanoke, Ogdensburg, Burlington, Portland, Manchester, Boston, Providence, New Haven, New York, Buffalo, Rochester, Albany, Trenton, Philadelphia, Baltimore, Washington, Los Angeles, San Francisco, Phoenix, Santa Fe, Albuquerque, Oklahoma City, Guthrie, Dallas, Ft. Worth, Houston, Galveston, San Antonio, New Orleans

EXPLANATION:

AVERAGE FARM PRICES PER BUSHEL

- 65¢ - 69¢
- 70¢ - 74¢
- 75¢ - 79¢
- 80¢ - 84¢
- 85¢ - 89¢
- 90¢ - 94¢
- 95¢ - 99¢
- $1.00 - $1.04
- $1.05 - $1.09
- $1.10 - $1.14
- $1.15 AND OVER
- BLANKS INDICATE AREA OF INSIGNIFICANT PRODUCTION (LESS THAN 500 ACRES TO THE COUNTY.)
- • LEADING GRAIN CENTERS

GULF OF MEXICO

(Pi

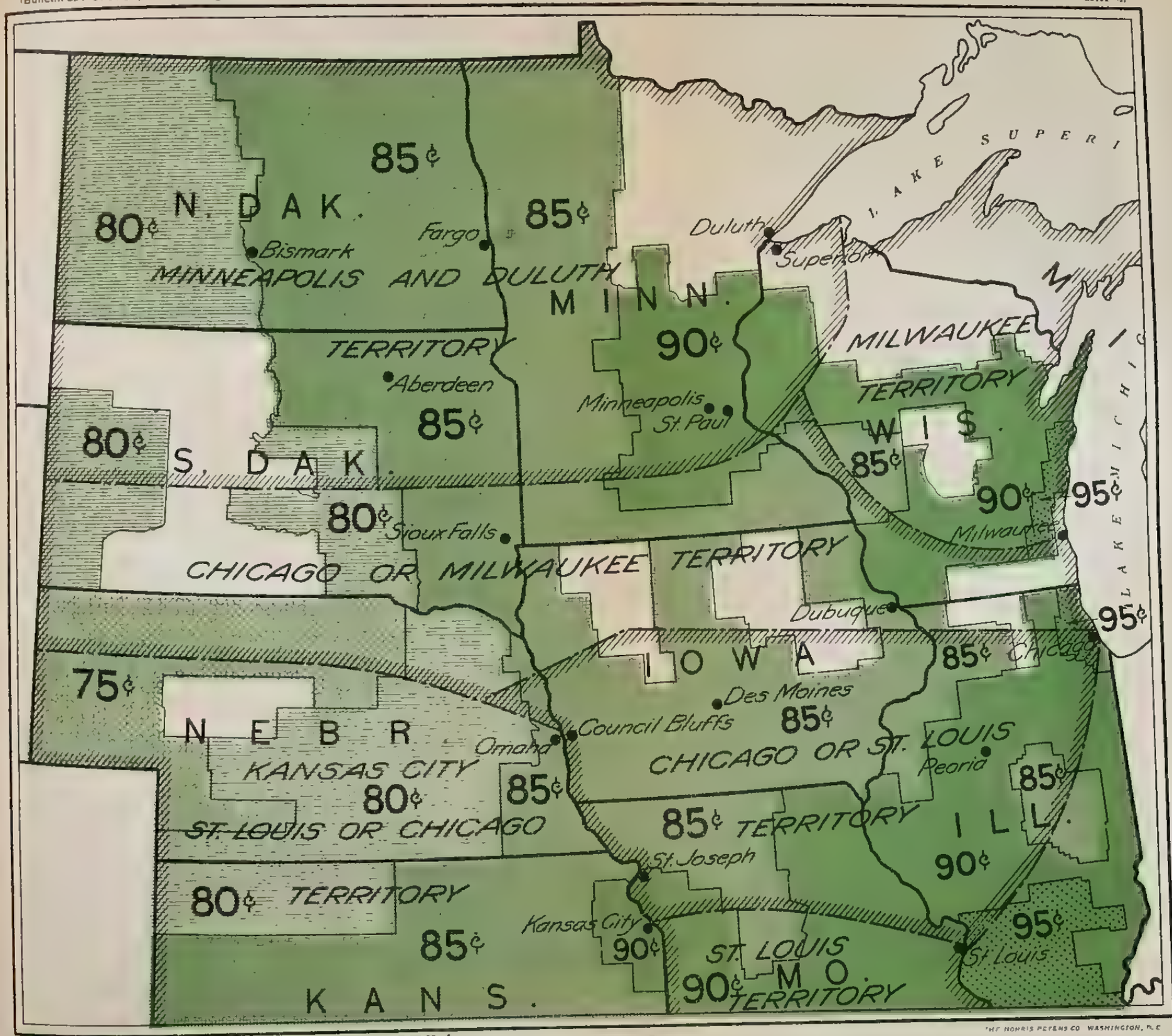
Bulle

EFFECT ON FARM PRICES OF WHEAT OF NEARNESS TO OR REMOTENESS FROM GRAIN MARKETS.

Figures and color areas represent farm prices of wheat as given on Map 3. The territory from which each market or group of markets receives most of its wheat is outlined on the map by an etched border.

Bulletin 594 U. S. Department of Agriculture.

MAP 4.



95¢ 90¢ 85¢ 80¢ 75¢ GEOGRAPHY OF WHEAT PRICES.

THE HORRIS PETERS CO WASHINGTON, D.C.

For the purpose of presenting concretely the effect of transportation charges on regional differences in prices paid to farmers, such charges may here be divided into the two general classes of export (or ocean) and domestic freights. Ocean freights fluctuate greatly, but taking the year 1913 as one in which normal conditions prevailed, the following illustration will serve:

Average ocean freights per bushel of wheat, 1913.

From—	To Liverpool, England.
	Cents.
New York	5.6
Baltimore	6.6
New Orleans	8.8
Columbia River and Puget Sound	21.0

Export wheat, all rail, carload lots, 1913, per bushel.

From—	To—	Cents.
Chicago	New York	10
Kansas City	do	15
Do	New Orleans	11.1

Thus the normal difference of about 5 cents per bushel in favor of Chicago, in the total transportation costs to Liverpool, as compared with the rate from Kansas City, represents also the disparity in the farm prices of adjoining territories, as will be seen by reference to map 3.

Similarly, the Pacific Ocean rates quoted above, although considerably cheaper than rail freights eastward, are yet nearly four times the ocean freight from New York. This higher transportation cost to European markets is an important factor in the lower prices received by Pacific wheat growers.

The line of cleavage between Pacific and eastern markets may be noted in the following rates from the area of lowest wheat prices:

Approximate transportation costs from Blackfoot, Idaho, to Liverpool, England (1913), per bushel of wheat.

Via Pacific:	*Cents.*	Via Atlantic:	*Cents.*
By rail to Seattle or Tacoma	24	By rail to New York	39.2
Ocean freight to Liverpool	21	New York to Liverpool	5.6
Total	45	Total	44.8

Transportation costs from Kansas City to Liverpool (1913) were about 20 cents per bushel. This difference of 25 cents, compared with the above, is reflected in the farm prices in surrounding areas—65 cents as against 90 cents.

In the internal commerce, wheat takes a special or commodity rate, with a complicated rate structure adapted to the characteristics of its commercial movement. The freight rates on grain are con-

stantly changing, but their main features are constant; also the elaborate rate structure which accounts for many geographic price differences. Only a brief statement of a few phases of wheat rates, in so far as they relate to the geography of farm prices, is possible here.

In connection with large areas of equal price in the wheat belt, it may be noted that although length of haul is an important element, the freight rates are not directly in proportion thereto. The following example is pertinent:

Distance rates between points in Kansas and Oklahoma, Atchison, Topeka & Santa Fe Railway.

[Rates per bushel of wheat (carload lots) in 1916.]

10–14 miles	$0.03
96–100 miles	.069
196–200 miles	.093

Thus 20 times the distance takes only 3 times the 10-mile rate. The wheat rate from Chicago is the same to all points in New England; the rate to Baltimore applies also to Richmond and Newport News. The freight rate from the trans-Mississippi wheat belt to our southeastern States usually is higher than to England. Export wheat moves to the seaboard at lower freight rates than does wheat intended for domestic consumption.

The natural tendency toward wheat concentration in the great commercial centers is enhanced by their use as rate-basing points, as well as by the reshipping and milling-in-transit rates. Flour usually takes a higher rate than wheat, but by the milling-in-transit privilege wheat may be stopped at some point en route, milled, and the product moved on again at the original rate charged for a through wheat shipment[1] to the eventual destination, instead of paying the local rate to the milling point and local flour rate to the destination. By means of the reshipping rate wheat may be moved into a primary market, say Chicago, and shipped on again, taking the through rate to the final destination instead of the sum of the local rates.

All-rail freight rates per bushel of wheat, in 1916 (carload lots).

From—		To Buffalo, Wheeling, Pittsburgh.	To Baltimore, Washington, Rochester, Newport News.	To New York.	To Boston, Portland, and New England points.
Chicago..	For domestic use.. Local rate	$0.09	$0.113	$0.131	$0.143
	For domestic use.. Reshipping rate	.06	.083	.101	.113
	For export Local rate	.....	.10	.108	.108
	For export Reshipping rate	.....	.069	.078	.078
Toledo or Delaware, Ohio, through local rate		.06	.08	.098	.11

Thus the local rate applying on wheat originating at or near Delaware, Ohio, or Toledo is about the same as the reshipping rate from Chicago, which applies to practically all shipments from that

[1] In some cases railroads apply the through flour rate to such traffic.

point. Reference to the maps will indicate the effect of this rate, as well as of the low rates via the Great Lakes, in the equality of farm prices near Chicago with those farther east and much nearer the seaports.

Still another complication is the difference in freight rates between carload and less-than-carload lots, which would particularly affect regions in which wheat traffic is small.

OTHER PRICE FACTORS.

Distinct use made of certain varieties of wheat, with individual price conditions. Local value of mill by-products; discriminatory effect of tariffs and freights on flour production.

Another factor affecting farm price is the demand for one kind of wheat compared with the demand for another kind. Thus durum or macaroni wheat meets a distinct demand in export and domestic trade; the hard spring and winter wheat is highly esteemed for bread making, and the softer wheats are considered better adapted for use in pastries. A general practice exists of bringing up the gluten content of the softer wheats by an admixture of the harder varieties. For example, notwithstanding the general easterly and southerly movement of hard Kansas wheat, some of it is shipped westward to Denver, where it is blended with the softer irrigated wheats.

The economic advantages of milling wheat close to the sources of raw material are offset in part by higher freights on flour, in part by local values of mill by-products, and by characteristics of the reshipping and milling-in-transit freight rates. Then, too, foreign tariffs frequently discriminate against flour imports, up to the point of absolute prohibition. It is usually considered that, on an average, 4½ bushels of No. 2 hard wheat produce one barrel of flour (196 pounds) and 70 pounds of feed, with 4 pounds of loss.

In concluding it may be added that, manifestly, from the very nature of the case, only the broad general conditions applying to the regional price differences can be entered into here. No single set of conditions alone determines a price, but each more or less determinable factor is influenced by other elements. Hence the treatment of causes has been intended as merely indicative and concerned primarily with the mention of some of the more noteworthy ones. In a publication of this character it has seemed best merely to set forth facts and conditions, with the avoidance, so far as possible, of discussions of economic theory.

SUMMARY: PRICE VARIATIONS AND ATTENDANT CONDITIONS.

In the selection of crops for which climate and soil are fitted, geographic differences in producers' prices constitute a potent factor. Isothermal lines indicate zones of like temperature; in a similar manner farm prices group themselves geographically into zones,

responding to economic conditions attending the transit of wheat from areas of supply to those of demand. These zones vary with each product.

Sectional price ratios are not fixed; dynamic in character, they shift slowly with general economic changes. Moreover, temporary upheavals frequently occur in price relationships, in response to changes in local and general price factors.

The lowest farm prices appear in the surplus areas of Idaho and Montana, with small consuming populations and most disadvantageously situated as to foreign markets, having a short rail but a long ocean haul westward, a long rail and short ocean haul eastward. From this pivotal area wheat prices graduate upward in every direction, following closely the movement of wheat toward the areas of deficient production. Toward the Pacific they increase to the west and south; toward the Atlantic the price graduations flow to the east and south, with maximum prices in the southeast.

Subordinate to the general price current, localities with higher or lower price levels than those in the surrounding territory may be found, responding to peculiarities of the commercial wheat movement. Comparative stability and small local differences in prices appear in the great wheat-producing sections, which have great volume of wheat traffic, competitive primary markets, and elaborate freight adjustments. Where wheat moves in smaller volume, greater price irregularity as well as higher prices obtain. In the mountainous areas raising insufficient wheat, as, for instance, in the Appalachian region, farm prices are higher; on the other hand, western exporting areas unfavorably situated as to transportation show lower prices, notwithstanding geographical proximity to regions of higher price.

A large part of the commercial wheat appears in a limited number of markets, with highly organized distributive systems. Each has a territory from which it ordinarily receives its supplies.

The largest single element in the regional price disparities is represented by freight rates. Though subject to change, in their main features they are constant in their influence on price conditions.

FARM PRICES CORRELATED WITH COSTS OF PRODUCTION, BY STATES AND SECTIONS.

Yields to the acre and costs per acre of wheat qualifying sectional price advantages.

Factors which enable areas with lowest priced wheat to show greatest net return.

A distinction should, of course, be drawn between gross price and net price to producers. Two qualifying factors appear in yields to the acre and costs per acre. Price and cost elements have been assembled in Table III (p. 22).

Costs of producing wheat are on an acreage basis; high yields depress and low yields increase costs per bushel. Figure 4 has

been added to throw into relief the proportionate significance of these factors. It will be seen that areas of high price show minimum net returns, higher prices per bushel being offset either by high acreage costs or such relatively low yields to the acre as to make the per bushel cost high. Varying land rental or interest charges, as well as costs of commercial fertilizers, are also shown.

In the South Atlantic States we see the highest price per bushel but lowest yields to the acre, hence highest proportionate cost per bushel, reducing returns per acre (see lower chart) to a point only slightly over costs. The New England and Middle Atlantic States, with high prices and high yields, show large returns per acre, offset

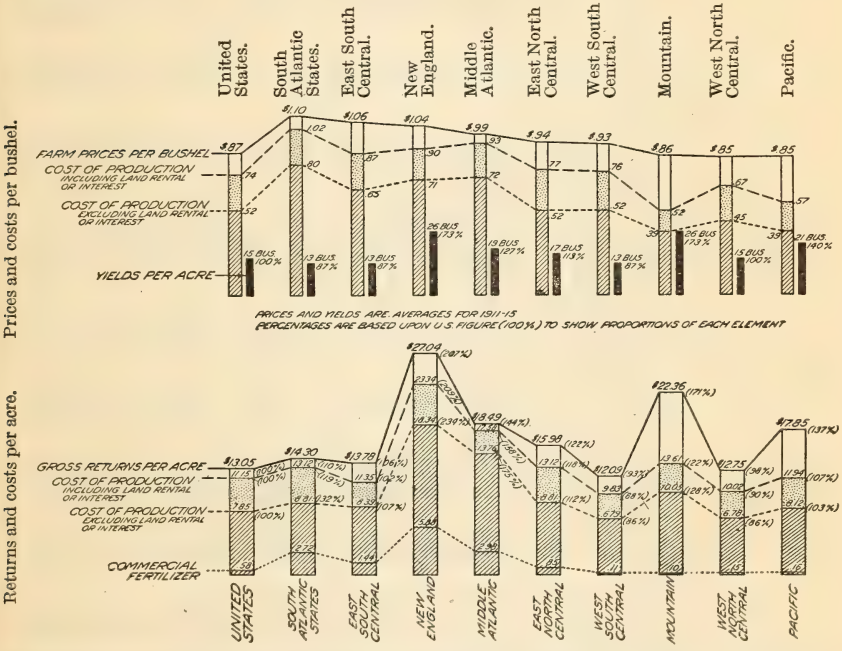

Prices and costs per bushel.
United States.
South Atlantic States.
East South Central.
New England.
Middle Atlantic.
East North Central.
West South Central.
Mountain.
West North Central.
Pacific.
FARM PRICES PER BUSHEL
COST OF PRODUCTION INCLUDING LAND RENTAL OR INTEREST
COST OF PRODUCTION EXCLUDING LAND RENTAL OR INTEREST
YIELDS PER ACRE
PRICES AND YIELDS ARE AVERAGES FOR 1911-15
PERCENTAGES ARE BASED UPON U.S. FIGURE (100%) TO SHOW PROPORTIONS OF EACH ELEMENT
Returns and costs per acre.
GROSS RETURNS PER ACRE
COST OF PRODUCTION INCLUDING LAND RENTAL OR INTEREST
COST OF PRODUCTION EXCLUDING LAND RENTAL OR INTEREST
COMMERCIAL FERTILIZER

FIG. 4.—Wheat: Farm prices, yields, and costs of production, by geographic divisions. (For details, see Table III, p. 22.)

by highest costs to the acre (in which high fertilizer and land-rental charges enter). On the other hand, the Mountain and Pacific States, with low prices per bushel but high yields, show in the lower chart high returns per acre and lowest costs.

Details follow in Table III. Relationships can best be seen in the percentages, basing the United States figure as 100 per cent. Thus we see in Montana, price per bushel is 85 per cent (compared with the United States as 100), but average yield is 167 per cent, and correlating the two in value per acre, 142 per cent; cost of production, excluding land rental or interest, 117 per cent; finally, ratio of returns to cost 201 per cent.

TABLE III.—*Wheat: Summary, 1911–1915—Geographic alignments, prices and costs of production.*[1]

State and geographic division.	Price and cost of production (per bushel).			Average yield per acre, 1911–1915.	Gross returns and costs of production per acre.					Ratio of returns per acre of grain or per bushel to cost (cost = 100 per cent).[3]	Measurement of relationships in percentages of the United States as average base.					
	Average farm price, 1911–1915.	Cost of production, 1909.[2]			Average returns per acre of grain, 1911–1915 (price × yield).	Value of products, 1909.[1]	Cost of production, 1909.[1]				Price per bushel.	Cost per bushel, excluding land rental or interest.	Yield per acre.	Value per acre.	Cost of production per acre.	
		Excluding land rental or interest.	Including land rental or interest.				Excluding land rental or interest.	Including land rental or interest.	Commercial fertilizer, in costs per acre.						Excluding land rental or interest.	Including land rental or interest.
	Cts.	*Cts.*	*Cts.*	*Bu.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
United States	**87**	**52**	**74**	**15**	**13.05**	**0.82**	**7.85**	**11.15**	**0.58**	**166**	**100**	**100**	**100**	**100**	**100**	**100**
New England	104	71	90	26	27.04	5.00	18.34	23.34	5.88	147	120	137	173	207	234	209
Middle Atlantic	99	72	93	19	18.81	4.51	13.76	17.58	2.98	137	114	138	127	144	175	158
South Atlantic	110	80	102	13	14.30	1.82	10.37	13.29	2.72	138	126	154	87	110	132	119
East North Central	94	52	77	17	15.98	1.43	8.81	13.12	.85	181	108	100	113	122	112	118
West North Central	85	45	67	15	12.75	.46	6.78	10.02	.15	188	98	87	100	98	86	90
East South Central	106	65	87	13	13.78	.71	8.39	11.35	1.44	164	122	125	87	106	107	102
West South Central	93	52	76	13	12.09	.61	6.79	9.83	.11	178	107	100	87	93	86	88
Mountain	86	39	52	26	22.36	.79	10.05	13.61	.10	222	99	75	173	171	128	122
Pacific	85	39	57	21	17.85	.83	8.12	11.94	.16	219	98	75	140	137	103	107
New England:																
Maine	107	67	95	25	26.75	.....	16.68	23.68	5.00	160	123	129	167	205	212	212
New Hampshire																
Vermont	101	74	85	27	27.27	5.00	20.00	23.00	6.75	136	116	142	180	209	255	206
Massachusetts																
Rhode Island																
Connecticut																
Middle Atlantic:																
New York	99	67	86	21	20.79	4.25	14.09	18.00	2.50	148	114	129	140	159	179	161
New Jersey	101	78	100	18	18.18	5.40	14.01	18.06	3.60	130	116	150	120	139	178	162
Pennsylvania	97	78	98	17	16.49	3.87	13.18	16.68	2.83	125	111	150	113	126	168	150
South Atlantic:																
Delaware	98	73	92	17	16.66	3.30	12.41	15.56	4.15	134	113	140	113	128	158	140
Maryland	97	72	91	16	15.52	3.10	11.57	14.60	3.06	134	111	138	107	119	147	131
Virginia	102	77	98	13	13.26	1.43	9.95	12.69	2.54	133	117	148	87	102	127	114
West Virginia	104	74	96	14	14.56	1.23	10.42	13.49	1.71	140	120	142	93	112	133	121
North Carolina	111	83	105	11	12.21	1.06	9.18	11.52	2.16	133	128	160	73	94	117	103
South Carolina	131	84	112	11	14.41	1.07	9.28	12.31	2.66	155	151	162	73	110	118	110
Georgia	124	89	117	11	13.64	1.53	9.79	12.85	2.73	139	143	171	73	105	125	115
Florida																

East North Central:																
Ohio	98	63	90	16	15.68	1.64	10.15	14.37	1.76	154	113	121	107	120	129	129
Indiana	95	59	91	15	14.25	1.18	8.80	13.59	1.20	162	109	113	100	109	112	122
Illinois	93	45	78	16	14.88	.87	7.21	12.54	.27	206	107	87	107	114	92	112
Michigan	95	59	80	17	16.15	1.95	10.01	13.54	.95	161	109	113	113	124	128	121
Wisconsin	90	41	61	19	17.10	1.51	7.87	11.56	.08	217	103	79	127	131	100	104
West North Central:																
Minnesota	86	52	71	14	12.04	.45	7.33	10.00	.18	164	99	100	93	92	93	90
Iowa	85	37	60	19	16.15	1.01	6.94	11.47	.10	233	98	71	127	124	88	103
Missouri	92	47	69	15	13.80	.58	7.01	10.36	.46	197	106	90	100	106	89	93
North Dakota	84	52	69	13	10.92	.24	6.77	8.99	.06	161	97	100	87	84	86	81
South Dakota	82	56	82	11	9.02	.20	6.15	8.98	.11	147	94	108	73	69	78	81
Nebraska	81	38	59	17	13.77	.41	6.38	10.08	.09	216	93	73	113	106	81	90
Kansas	86	49	74	14	12.04	.31	6.88	10.29	.06	175	99	94	93	92	88	92
East South Central:																
Kentucky	99	63	89	13	12.87	.75	8.21	11.57	1.13	157	114	121	87	99	105	104
Tennessee	101	66	92	12	12.12	.86	7.90	11.03	1.15	153	116	127	80	93	101	99
Alabama	120	76	95	12	14.40	.52	9.06	11.45	2.04	159	138	146	80	110	115	103
Mississippi	104	.....	.....	14	14.56	.....	.....	.....	.....	.....	120	.....	93	112	.....	.....
West South Central:																
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Texas	99	48	72	14	13.86	.63	6.71	10.03	.05	207	114	92	93	106	85	90
Oklahoma	86	54	78	12	10.32	.42	6.51	9.31	.03	159	99	104	80	79	83	83
Arkansas	95	60	84	12	11.40	.77	7.15	10.14	.24	159	109	115	80	87	91	91
Mountain:																
Montana	74	37	50	25	18.50	.....	9.22	12.47	.....	201	85	71	167	142	117	112
Wyoming	83	37	50	26	21.58	1.55	9.69	12.90	.22	223	95	71	173	165	123	116
Colorado	80	37	55	22	17.60	.72	8.13	12.05	.05	216	92	71	147	135	104	108
New Mexico	93	40	54	22	20.46	1.10	8.72	11.85	.....	235	107	77	147	157	111	106
Arizona	111	42	48	30	33.30	.....	12.67	14.42	.....	263	128	81	200	255	161	129
Utah	78	48	71	25	19.50	1.43	12.05	17.69	.36	162	90	92	167	149	154	159
Nevada	93	.....	.....	29	26.97	.....	.....	.....	.....	.....	107	.....	193	207	.....	.....
Idaho	72	35	50	28	20.16	.73	9.84	13.89	.07	205	83	67	187	154	125	125
Pacific:																
Washington	79	36	55	24	18.96	.95	8.67	13.10	.38	219	91	69	160	145	110	117
Oregon	82	36	54	22	18.04	.95	7.89	11.89	.08	229	94	69	147	138	101	107
California	95	49	68	16	15.20	.59	7.81	10.84	.02	195	109	94	107	116	99	97

[1] Costs of production from a special inquiry of the Bureau of Crop Estimates. ("Crop Reporter," May, 1911, p. 36.) Although the data apply to the year 1909, they were collated on a uniform and comparable basis, and for the present purpose of comparing average cost conditions in one State or section with another, they possess particular value.

[2] Cost per bushel obtained by dividing costs per acre, as given in the inquiry cited, by average yield, 1911–1915. It is believed that costs per acre are comparatively stable.

[3] Excluding by-products in returns and land rental in costs. Value of by-products was considered as being offset, roughly, by values of farm manure applied.

Recent figures for cost of production in the United States are not available for any recent period, hence an old inquiry (1909) has been used. For the present purpose of comparing cost conditions in one section of the country with another the figures still possess value. Prices and yields employed are averages for the five years, 1911–1915.

RETROSPECTIVE VIEW, 1871 TO 1915.

Present tendencies.

Changing sectional price advantage; minimum price moving west and north; decreasing disparity in prices between surplus and deficient wheat regions; shifting conditions in Mountain States.

Trend of yields to the acre, by States and sections.

Trend of value per acre, coordinating price and yield, by States and sections.

Geographic changes in population; wheat production and acreage; per capita production.

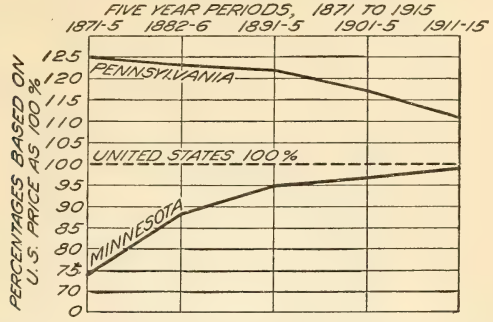
Importance appears to attach to the fact that the geographic differences in farm prices are not fixed; that, on the contrary, they are dynamic in character, changing with producing and distributive conditions. Each factor herein is variable. The result may be likened to a slowly moving current in which more or less strong eddies are produced by diverse causes, each circle impinging and merging into the general flow. Mere reference is sufficient here to the continuing agricultural readjustments within the United States, coincident with the westward movement of population, grain, and live-stock production and markets; the transitions from surplus grain production, low land values, and relatively low prices, to a more diversified farming, higher land values, prices, etc.; the increasing wheat deficiency of the older regions, and more recently, development through irrigation of the arid interior. The distance between the eastern areas deficient in wheat production and the surplus-producing territories to the west has steadily widened; this has to some extent been offset by cheapening costs of transportation as well as lower marketing expense. Prices have responded to these transformations, and present geographic tendencies therein may be seen through their indicated development.

The reflection of economic changes can be seen in Table IV (p. 26), showing shifting in geographic price advantages of wheat, from 1871 to 1915. A "wave length" of five years was employed to avoid unusual variations. Particular attention is directed to the percentages, based on the United States figure as 100 per cent.

The minimum farm price has moved steadily north and west. In 1871–1875 it appeared in Nebraska; in 1891–1895 in the Dakotas; and in 1911–1915 in Idaho and Montana. During the period covered by Table IV, geographic differences in wheat prices, although still large, have narrowed notably; particularly is this true as between importing eastern and exporting western States. The diminishing

price spreads have been attended by decreasing transportation costs and development of distributive methods; also by a decline of wheat growing east of the Mississippi, as well as by comparative concen-

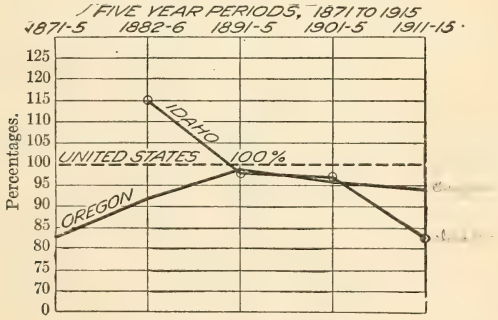
FIG. 5.—Decreasing farm-price differences between Pennsylvania (importing State) and Minnesota (exporting State).



		1871–75	1882–86	1891–95	1901–5	1911–15
Pennsylvania..	Per cent..	125	123	122	117	111
	Price.....	$1.27	$0.96	$0.73	$0.84	$0.97
Minnesota.....	Per cent..	74	88	95	97	99
	Price.....	$0.75	$0.69	$0.57	$0.70	$0.86

tration of the national wheat production within the West North Central group. A steady increase may be seen in the relative prices of

FIG. 6.—Changing farm-price ratios, Idaho (transition from importing to exporting State) and Oregon (exporting State).



		1871–75	1882–86	1891–95	1901–5	1911–15
Idaho.....	Per cent..	.....	115	98	97	83
	Price.....	.....	$0.90	$0.59	$0.70	$0.72
Oregon.....	Per cent..	83	92	98	96	94
	Price.....	$0.85	$0.72	$0.59	$0.69	$0.82

the great wheat States of this group compared with the United States as a whole; on the other hand, a rapid decrease took place in the Mountain States. Farmers in wheat-importing States of the

Mountain division still receive relatively high prices for their wheat, but in wheat-exporting regions of this division the lowest farm prices prevail.

As an illustration, in figure 5 the course of price differences between Pennsylvania, an importing State, and Minnesota, an exporting wheat State, has been plotted. The difference in the price per bushel at the first period (1871–1875) was 52 cents; at the last (1911–1915), 11 cents.

Similarly, in figure 6 the course of prices in Idaho, showing a transition from a State producing insufficient wheat at the beginning of the period to its present status as an exporting State, has been compared with that of Oregon, an exporting State. When a deficiency State the disadvantage of its position resulted in a wheat price in Idaho 115 per cent of the United States average; and as an exporting State, disadvantageously situated as to wheat markets, its ratio has declined to 83 per cent of the average; but Oregon, a consistently exporting State, has increased its price ratio from 83 to 94 per cent.

Details are shown in Table IV.

TABLE IV.—*Farm prices of wheat, 1871 to 1915.*

[A review, by States and sections, of the trend of geographic price differences.]

State and geographic division.	Farm prices per bushel, in 5-year averages.					Measurement of changes in percentages of the United States average as base (100 per cent).				
	1911–1915	1901–1905	1891–1895	1882–1886[1]	1871–1875[2]	1911–1915	1901–1905	1891–1895	1882–1886[1]	1871–1875
	Cents.	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
United States	**87**	**72**	**60**	**78**	**102**	**100**	**100**	**100**	**100**	**100**
New England	104	100	90	122	151	120	138	150	156	148
Middle Atlantic	99	86	76	97	131	114	119	127	124	128
East North Central	94	79	62	81	102	108	110	103	104	100
West North Central	85	67	53	66	81	98	93	88	85	79
South Atlantic	110	93	79	100	136	126	129	132	128	133
East South Central	106	90	76	98	124	122	125	126	125	122
West South Central	93	79	69	94	132	107	110	115	121	129
Mountain	86	81	68	91	.....	99	112	113	117	.....
Pacific	85	71	59	75	102	98	99	98	96	100
New England:										
Maine	107	99	93	130	158	123	137	155	167	155
New Hampshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vermont	101	100	86	115	144	116	139	143	146	141
Massachusetts	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middle Atlantic:										
New York	99	87	78	97	131	114	121	130	124	128
New Jersey	101	86	78	99	136	116	119	130	127	133
Pennsylvania	97	84	73	96	127	111	117	122	123	125
East North Central:										
Ohio	98	83	65	87	110	113	115	108	112	108
Indiana	95	81	61	82	102	109	112	102	105	100
Illinois	93	77	59	78	95	107	107	98	100	93
Michigan	95	81	65	83	114	109	112	108	106	112
Wisconsin	90	75	60	76	87	103	104	100	97	85

[1] 1882–1886 taken instead of 1881–1885 in view of availability of statistics for a larger number of States beginning 1882.

[2] Values reduced to gold basis.

TABLE IV.—*Farm prices of wheat, 1871 to 1915*—Continued.

State and geographic division.	Farm prices per bushel in 5 year averages.					Measurement of changes in percentages of the United States average as base (100 per cent).				
	1911–1915	1901–1905	1891–1895	1882–1886[1]	1871–1875[2]	1911–1915	1901–1905	1891–1895	1882–1886[1]	1871 1875
West North Central:	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*Cents.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*	*P.ct.*
Minnesota	86	70	57	69	75	99	97	95	88	74
Iowa	85	68	57	66	71	98	94	95	85	70
Missouri	92	75	56	75	98	106	104	93	96	96
North Dakota	84	65	49	63	.....	97	90	82	81	.....
South Dakota	82	62	50			94	86	83		
Nebraska	81	62	50	57	66	93	86	83	73	65
Kansas	86	67	51	63	94	99	93	85	81	92
South Atlantic:										
Delaware	98	83	71	96	135	113	115	118	123	132
Maryland	97	82	74	94	130	111	114	123	121	127
Virginia	102	87	72	93	122	117	121	120	119	120
West Virginia	104	88	74	93	117	120	122	123	119	115
North Carolina	111	98	80	103	128	128	136	133	132	125
South Carolina	131	108	95	114	174	151	150	158	146	171
Georgia	124	104	90	109	146	143	144	150	140	143
East South Central:										
Kentucky	99	85	65	85	105	114	118	108	109	103
Tennessee	101	87	66	86	109	116	121	110	110	107
Alabama	120	98	90	108	133	138	136	150	138	130
Mississippi	104	92	82	111	147	120	128	137	142	144
West South Central:										
Arkansas	95	83	70	96	128	109	115	117	123	125
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oklahoma	86	69	.....	.....	.....	99	96	.....	.....	.....
Texas	99	86	68	91	137	114	119	113	117	134
Mountain:										
Montana	74	71	68	92	.....	85	98	113	118	.....
Idaho	72	70	59	90	.....	83	97	98	115	.....
Wyoming	83	77	68	88	.....	95	107	113	113	.....
Colorado	80	74	61	80	.....	92	103	102	103	.....
New Mexico	93	86	80	103	.....	107	119	133	132	.....
Arizona	111	103	77	102	.....	128	143	128	131	.....
Utah	78	76	59	78	.....	90	106	98	100	.....
Nevada	93	91	72	99	164	107	126	120	127	161
Pacific:										
Washington	79	65	52	73	.....	91	90	87	94	.....
Oregon	82	69	59	72	85	94	96	98	92	83
California	95	79	67	80	120	109	110	112	103	118

[1] 1882–1886 taken instead of 1881–1885 in view of availability of statistics for a larger number of States beginning 1882.
[2] Values reduced to gold basis.

Data associating shifting geographic differences in farm prices per bushel of wheat with trend of yields to the acre are given in Table V (p. 28), and value per acre in Table VI (p. 29). These tables are self-explanatory. Absolute figures as well as percentages are given, but the changes can be followed more easily through the percentages based upon the United States figure as 100 per cent.

TABLE V.—*Wheat: Trend of yields per acre, 1871–1915.*

[Limitations of soil and climate, reflected in yields per acre, as qualifying price factors.]

State and geographic division.	Yield per acre, in 5-year averages.					Comparison of changes in percentages of the United States average as base.				
	1911–1915.	1901–1905.	1891–1895.	1882–1886.	1871–1875.	1911–1915.	1901–1905.	1891–1895.	1882–1886.	1871–1875.
	Bu.	*Bu.*	*Bu.*	*Bu.*	*Bu.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
United States	**15**	**14**	**13**	**12**	**12**	**100**	**100**	**100**	**100**	**100**
New England	26	22	20	16	16	173	157	154	133	133
Middle Atlantic	19	16	15	14	14	127	114	115	117	117
East North Central	17	15	15	13	12	113	107	115	108	100
West North Central	15	14	13	13	13	100	100	100	108	108
South Atlantic	13	10	10	8	9	87	71	77	67	75
East South Central	13	9	9	6	9	87	64	69	50	75
West South Central	13	10	10	8	13	87	71	77	67	108
Mountain	26	23	19	17	.....	173	164	146	142	.....
Pacific	21	18	16	15	16	140	129	123	125	133
New England:										
Maine	25	24	18	14	14	167	171	138	117	117
New Hampshire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vermont	27	20	21	18	17	180	143	161	150	142
Massachusetts	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middle Atlantic:										
New York	21	16	16	15	13	140	114	123	125	108
New Jersey	18	15	14	13	15	120	107	108	108	125
Pennsylvania	17	16	15	13	14	113	114	115	108	117
East North Central:										
Ohio	16	15	16	13	12	107	107	123	108	100
Indiana	15	14	15	13	11	100	100	115	108	92
Illinois	16	15	15	12	12	107	107	115	100	100
Michigan	17	15	15	16	13	113	107	115	133	108
Wisconsin	19	16	14	13	14	127	114	108	108	117
West North Central:										
Minnesota	14	13	15	13	15	93	93	115	108	125
Iowa	19	13	15	11	12	127	93	115	92	100
Missouri	15	14	13	11	12	100	100	100	92	100
North Dakota	13	14	14	14	.....	87	100	108	117	.....
South Dakota	11	12	11			73	86	85		
Nebraska	17	17	11	13	12	113	121	85	108	100
Kansas	14	14	12	15	14	93	100	92	125	117
South Atlantic:										
Delaware	17	15	13	11	11	113	107	100	92	92
Maryland	16	15	15	12	11	107	107	115	100	92
Virginia	13	9	10	8	8	87	64	77	67	67
West Virginia	14	10	11	10	10	93	71	85	83	83
North Carolina	11	7	7	6	7	73	50	54	50	58
South Carolina	11	7	6	6	6	73	50	46	50	50
Georgia	11	7	7	6	7	73	50	54	50	58
Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East South Central:										
Kentucky	13	10	12	9	10	87	71	92	75	83
Tennessee	12	9	9	6	8	80	64	69	50	67
Alabama	12	9	8	6	8	80	64	62	50	67
Mississippi	14	9	8	5	10	93	64	62	42	83
West South Central:										
Arkansas	12	9	9	7	10	80	64	69	58	83
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oklahoma	12	12	11	.....	.....	80	86	85	.....	.....
Texas	14	10	11	10	16	93	71	85	86	133
Mountain:										
Montana	25	26	22	18	.....	167	186	169	150	.....
Idaho	28	23	20	17	.....	187	164	154	142	.....
Wyoming	26	23	20	17	.....	173	164	154	142	.....
Colorado	22	23	19	19	.....	147	164	146	158	.....
New Mexico	22	18	16	14	.....	147	129	123	108	.....
Arizona	30	23	17	14	.....	200	164	131	117	.....
Utah	25	23	19	17	.....	167	164	146	142	.....
Nevada	29	27	19	18	21	193	193	146	150	175
Pacific:										
Washington	24	24	17	16	.....	160	171	131	133	.....
Oregon	22	19	18	16	19	147	136	138	133	158
California	16	11	13	12	12	107	79	100	100	100

TABLE VI.—*Wheat: Gross returns per acre.*

[Coordinating price per bushel and yield per acre. A review of the trend of returns per acre of wheat, 1871–1915, and measurement of tendencies in absolute and relative figures.]

State and geographic division.	Gross returns per acre, in 5-year averages.					Comparisons in percentages of the United States average as base (100).				
	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875
	Dolls.	*Dolls.*	*Dolls.*	*Dolls.*	*Dolls.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*	*P. ct.*
United States	**13.05**	**10.08**	**7.80**	**9.36**	**12.24**	**100**	**100**	**100**	**100**	**100**
New England	27.01	21.88	17.40	19.45	23.30	207	217	224	208	190
Middle Atlantic	18.49	13.42	11.45	13.30	18.40	142	133	147	142	150
East North Central	15.61	11.90	9.31	10.90	12.56	120	118	119	116	103
West North Central	12.53	9.27	6.91	8.36	10.52	96	92	89	89	86
South Atlantic	14.32	9.01	7.61	8.31	11.46	110	89	98	89	94
East South Central	13.49	8.36	6.88	6.21	11.14	103	83	88	66	91
West South Central	11.86	8.12	6.89	7.91	17.36	91	81	88	85	142
Mountain	22.26	18.81	12.84	15.10	.....	171	187	165	161	.....
Pacific	17.40	12.47	9.39	10.93	15.28	133	124	120	117	125
New England:										
Maine	26.75	23.76	16.74	18.20	22.12	205	236	215	194	181
New Hamsphire	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Vermont	27.27	20.00	18.06	20.70	24.48	209	198	232	221	200
Massachusetts	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Rhode Island	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Connecticut	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Middle Atlantic:										
New York	20.79	13.92	12.48	14.55	17.03	159	138	160	155	139
New Jersey	18.18	12.90	10.92	12.87	20.40	139	128	140	137	167
Pennsylvania	16.49	13.44	10.95	12.48	17.78	126	133	140	133	145
East North Central:										
Ohio	15.68	12.45	10.40	11.31	13.20	120	124	133	121	108
Indiana	14.25	11.34	9.15	10.66	11.22	109	112	117	114	92
Illinois	14.88	11.55	8.85	9.36	11.40	114	115	113	100	93
Michigan	16.15	12.15	9.75	13.28	14.82	124	121	125	142	121
Wisconsin	17.10	12.00	8.40	9.88	12.18	131	119	108	106	100
West North Central:										
Minnesota	12.04	9.10	8.55	8.97	11.25	92	90	110	96	92
Iowa	16.15	8.84	8.55	7.26	8.52	124	88	110	78	70
Missouri	13.80	10.50	7.28	8.25	11.76	106	104	93	88	96
North Dakota	10.92	9.10	6.86	} 8.82	.....	{ 84	90	88	} 94	.....
South Dakota	9.02	7.44	5.50			{ 69	74	71		
Nebraska	13.77	10.54	5.50	7.41	7.92	106	105	71	79	65
Kansas	12.04	9.38	6.12	9.45	13.16	92	93	78	101	108
South Atlantic:										
Delaware	16.66	12.45	9.23	10.56	14.85	128	124	118	113	121
Maryland	15.52	12.30	11.10	11.28	14.30	119	122	142	121	117
Virginia	13.26	7.83	7.20	7.44	9.76	102	78	92	79	80
West Virginia	14.56	8.80	8.14	9.30	11.70	112	87	104	99	95
North Carolina	12.21	6.86	5.60	6.18	8.96	94	68	72	66	73
South Carolina	14.41	7.56	5.70	6.84	10.44	110	75	73	73	85
Georgia	13.64	7.28	6.30	6.54	10.22	105	72	81	70	83
Florida	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
East South Central:										
Kentucky	12.87	8.50	7.80	7.65	10.50	99	84	100	82	86
Tennessee	12.12	7.83	5.94	5.16	8.72	93	78	76	55	71
Alabama	14.40	8.82	7.20	6.48	10.64	110	87	92	69	87
Mississippi	14.56	8.28	6.56	5.55	14.70	112	81	84	59	120
West South Central:										
Arkansas	11.40	7.47	6.30	6.72	12.80	87	74	81	71	105
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oklahoma	10.32	8.28	.....	.....	.....	79	81	.....	.....	.....
Texas	13.86	8.60	7.48	9.10	21.92	106	85	96	97	179
Mountain:										
Montana	18.50	18.46	14.96	16.56	.....	142	183	192	177	.....
Idaho	20.16	16.10	11.80	15.30	.....	154	160	151	163	.....
Wyoming	21.58	17.71	13.60	14.96	.....	165	176	174	160	.....
Colorado	17.60	17.02	11.59	15.20	.....	135	169	149	162	.....
New Mexico	20.46	15.48	12.80	13.39	.....	157	154	164	143	.....
Arizona	33.30	23.69	13.09	14.28	.....	255	235	168	153	.....
Utah	19.50	17.48	11.21	13.26	.....	149	173	144	142	.....
Nevada	26.97	24.57	13.68	17.82	34.44	207	244	175	190	281
Pacific:										
Washington	18.96	15.60	8.84	11.68	.....	145	155	113	125	.....
Oregon	18.04	13.11	10.62	11.52	16.15	138	130	136	123	132
California	15.20	8.69	8.71	9.60	14.40	116	86	112	103	118

TABLE VII.—*Wheat: Review, 1871 to 1915.*

[Geographic distribution of wheat production and acreage in absolute and relative figures, adjustments of production to population.]

State and geographic division.	Production, in five-year averages, showing geographic distribution. [000 omitted.]					Average 1911–1915 as compared with 1901–1905 (100 per cent).	Trend of production per capita; i. e., ratio of wheat supplies to increasing population. (bushels per inhabitant).[1]					Distribution of wheat production in percentages of United States totals.					Per cent of all improved land occupied by wheat.[2]			
	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875		1911–1915	1901–1905	1891–1895	1882–1886	1871–1875	1911–1915	1901–1905	1891–1895	1882–1886	1871–1875	1909	1899	1889	1879
United States	**803,501**	**660,345**	**491,721**	**450,480**	**272,443**	**122**	**8.3**	**8.2**	**7.4**	**8.2**	**6.5**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**9.3**	**12.7**	**9.4**	**12.4**
New England	107	226	462	1,187	937	47	(3)	(3)	.1	.3	.3	(4)	(4)	0.1	0.3	0.3	0.1	0.1	0.1	0.6
Middle Atlantic	30,798	35,760	29,232	31,430	25,130	86	1.5	2.2	2.2	2.8	2.7	3.8	5.4	5.9	7.0	9.2	5.5	7.2	6.0	7.0
South Atlantic	37,187	32,877	27,874	26,566	20,570	113	2.9	3.0	3.0	3.3	3.2	4.6	5.0	5.7	5.9	7.6	4.6	7.3	6.4	9.0
East North Central	124,045	106,542	136,914	145,855	104,777	116	6.5	6.4	9.6	12.0	10.7	15.4	16.1	27.8	32.3	38.5	7.9	12.0	11.8	16.1
West North Central	416,425	345,102	202,973	156,639	71,183	121	34.5	32.1	21.7	21.6	15.7	51.8	52.3	41.3	34.8	26.1	15.7	18.5	12.6	19.2
East South Central	19,196	18,111	19,908	20,749	17,909	106	2.2	2.3	2.9	3.5	3.8	2.4	2.7	4.0	4.6	6.6	3.0	7.4	5.1	8.6
West South Central	41,381	33,447	9,100	6,763	2,524	124	4.3	4.6	1.7	1.7	1.0	5.2	5.1	1.9	1.5	0.9	2.7	7.4	1.6	3.1
Mountain	59,765	22,593	8,355	7,324	336	265	20.3	11.5	6.2	8.4	0.8	7.5	3.4	1.7	1.6	0.1	8.1	11.2	6.0	10.9
Pacific	74,597	65,687	56,903	53,967	26,648	114	15.6	22.3	27.8	37.9	33.0	9.3	10.0	11.6	12.0	9.8	15.2	24.8	21.5	17.7
The Territories	.....	.....	.....	.....	2,429	.....	.....	.....	.....	.....	6.0	.....	.....	.....	.....	.9	.....	.....	.....	.....
New England:																				
Maine	80	192	199	584	271	42	.1	.3	.3	.9	.4	(4)	(4)	(4)	.1	.1	.1	.3	.1	1.3
New Hampshire	.....	.....	63	169	182	.....	(3)	(3)	.2	.5	.6	(4)	(4)	(4)	(4)	.1	(4)	(4)	.1	.5
Vermont	27	34	197	379	411	79	.1	.1	.6	1.1	1.2	(4)	(4)	(4)	.1	.1	(4)	.1	.3	.6
Massachusetts	.....	.....	.....	19	34	.....	(3)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Rhode Island	.....	.....	.....	.....	.....	.....	(3)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
Connecticut	.....	.....	3	36	39	.....	(3)	(3)	(3)	(3)	.1	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	.1
Middle Atlantic:																				
New York	7,348	8,242	7,897	10,913	7,542	89	.8	1.1	1.2	2.0	1.6	.9	1.2	1.6	2.4	2.8	1.9	3.6	2.8	4.2
New Jersey	1,463	1,709	1,765	1,968	1,923	86	.5	.8	1.1	1.6	2.0	.2	.3	.3	.5	.7	4.6	6.7	6.1	7.1
Pennsylvania	21,987	25,809	19,570	18,549	15,665	85	2.7	3.8	3.5	4.0	4.2	2.7	3.9	4.0	4.1	5.7	9.7	11.5	10.0	10.8
South Atlantic:																				
Delaware	1,936	1,681	1,269	1,062	632	115	9.3	8.8	7.3	6.8	4.8	.2	.3	.3	.2	.2	15.6	15.7	12.4	11.7
Maryland	9,981	11,618	7,387	7,444	5,036	86	7.5	9.5	6.8	7.6	6.1	1.2	1.8	1.5	1.7	1.9	17.6	18.0	15.0	17.0
Virginia	11,295	7,198	7,485	6,507	6,192	157	5.3	3.8	4.4	4.1	4.7	1.4	1.1	1.5	1.4	2.3	7.0	9.2	8.1	10.6
West Virginia	3,442	3,788	4,285	3,397	2,649	91	2.6	3.6	5.2	5.0	5.4	.4	.6	.9	.8	1.0	3.8	8.1	7.7	10.4
North Carolina	7,345	4,387	4,845	4,075	2,908	167	3.2	2.2	2.8	2.7	2.5	.9	.6	1.0	.9	1.1	5.7	9.0	8.5	10.0
South Carolina	1,199	1,949	905	1,276	620	62	.8	1.4	.7	1.2	.8	.2	.3	.2	.3	.2	.7	3.0	2.2	4.1
Georgia	1,989	2,256	1,698	2,805	2,533	88	.7	1.0	.9	1.7	2.0	.3	.3	.3	.6	.9	.8	3.0	2.1	5.8
Florida	.....	.....	.....	.....	.....	.....	(3)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)
East North Central:																				
Ohio	31,566	29,586	40,626	34,296	19,768	107	6.4	6.8	10.6	10.1	7.0	3.9	4.5	8.3	7.6	7.3	9.5	16.7	12.4	14.1
Indiana	34,950	27,858	38,442	34,914	20,003	125	12.7	10.8	16.8	16.9	11.3	4.3	4.2	7.8	7.8	7.3	12.3	17.3	17.0	18.8

Illinois	38,631	26,144	26,255	29,014	27,153	148	6.5	5.2	6.4	8.6	10.0	4.8	4.0	5.3	6.4	10.0	7.8	6.6	8.7	12.3
Michigan	15,198	14,759	21,890	28,986	15,713	103	5.2	5.8	10.0	15.9	11.9	1.9	2.2	4.4	6.4	5.8	6.3	16.3	15.2	22.0
Wisconsin	3,700	8,195	9,701	18,645	22,140	45	1.5	3.8	5.4	12.7	19.5	.5	1.2	2.0	4.1	8.1	1.2	4.9	7.6	21.3
West North Central:																				
Minnesota	59,081	74,257	46,115	37,050	22,362	80	27.1	40.2	32.3	37.3	41.3	7.4	11.3	9.4	8.2	8.2	16.7	35.6	30.3	42.0
Iowa	14,098	14,680	13,197	29,413	27,758	96	6.3	6.6	6.6	16.9	21.0	1.8	2.2	2.7	6.5	10.2	1.8	5.7	2.3	15.3
Missouri	35,377	32,957	21,541	22,424	11,798	107	10.5	10.4	7.7	9.4	6.4	4.4	5.0	4.4	5.0	4.3	8.2	9.0	9.8	12.4
North Dakota	105,887	61,388	41,647	21,707		172	160.2	155.0	181.9	73.3		13.1	9.3	8.5	4.8	(5)	40.0	46.2	58.2	23.1
South Dakota	39,258	43,716	25,440			90	61.1	95.9	69.9			4.9	6.6	5.2			20.3	35.3	32.5	
Nebraska	59,844	43,269	13,596	22,277	2,998	138	48.5	39.2	12.8	32.0	13.5	7.4	6.6	2.7	5.0	1.1	10.9	13.8	5.2	26.7
Kansas	102,880	74,835	41,437	23,768	6,267	137	58.4	48.7	28.8	20.3	11.3	12.8	11.3	8.4	5.3	2.3	20.0	15.2	7.1	17.3
East South Central:																				
Kentucky	9,813	8,602	11,182	11,290	7,210	114	4.2	3.9	5.7	6.5	5.1	1.2	1.3	2.3	2.5	2.6	4.7	10.4	7.6	10.8
Tennessee	8,789	8,497	7,855	7,709	9,423	103	3.9	4.1	4.3	4.7	7.0	1.1	1.3	1.6	1.7	3.5	5.7	13.9	9.4	14.1
Alabama	528	982	748	1,530	1,020	54	.2	.5	.5	1.1	.9	.1	.1	.1	.3	.4	.1	1.4	.5	4.2
Mississippi	66	30	123	220	256	220	(3)	(3)	.1	.2	.3	(4)	(4)	(4)	.1	.1	(4)	.1	(4)	.8
West South Central:																				
Louisiana				7			(3)	(3)	(3)	(3)	(3)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	(4)	.1
Texas	13,637	11,635	5,084	5,107	1,463	117	3.3	3.5	2.0	2.8	1.4	1.7	1.8	1.1	1.1	.5	1.2	5.3	1.7	3.0
Oklahoma	26,217	[6] 19,600	2,454		(5)	134	13.5	[6] 18.6	5.9		(5)	3.3	[6] 3.0	.5		(5)	6.7	[6] 17.8	.4	
Arkansas	1,527	2,212	1,562	1,649	1,061	69	.9	1.6	1.3	1.8	1.8	.2	.3	.3	.4	.4	.7	5.5	2.6	5.7
Mountain:																				
Montana	20,900	2,587	1,173	1,245	(5)	808	49.9	9.1	6.8	15.4	(5)	2.6	.4	.2	.3	(5)	7.1	5.3	2.0	6.7
Wyoming	2,366	560	121	43	(5)	422	14.5	5.1	1.7	1.2	(5)	1.9	.1	(4)	(4)	(5)	3.3	2.5	1.0	.3
Colorado	10,709	6,504	2,262	2,231	(5)	165	12.1	10.5	5.0	7.9	(5)	.3	1.0	.5	.5	(5)	7.9	13.0	7.0	10.5
New Mexico	1,542	789	751	924	(5)	195	4.2	3.4	4.4	6.8	(5)	1.4	.1	.2	.2	(5)	2.2	11.6	8.3	21.6
Arizona	879	418	239	263	(5)	210	3.8	2.8	2.4	4.5	(5)	.2	.1	.1	.1	(5)	5.7	9.6	6.0	16.1
Utah	6,601	4,221	2,086	1,594	(5)	156	16.3	13.8	9.0	9.3	(5)	.1	.6	.4	.3	(5)	13.0	18.3	15.4	17.4
Nevada	1,246	601	161	95	336	207	13.1	11.1	3.5	1.7	6.9	.8	.1	(4)	(4)	0.1	1.9	3.2	0.5	1.1
Idaho	15,522	6,913	1,562	929	(5)	225	41.0	32.8	14.2	16.9	(5)	.2	1.0	.3	.2	(5)	14.4	18.8	10.5	11.2
Pacific:																				
Washington	49,985	28,567	9,482	4,943	(5)	175	37.2	40.5	23.4	26.3	(5)	6.2	4.3	1.9	1.1	(6)	33.2	31.4	20.5	16.8
Oregon	18,018	14,508	11,205	13,135	3,440	124	23.8	29.5	32.2	56.6	29.7	2.2	2.2	2.3	2.9	1.3	17.9	26.2	15.7	20.2
California	6,594	22,612	36,216	35,889	23,208	29	2.5	12.9	28.0	35.7	35.6	.9	3.5	7.4	8.0	8.5	4.2	22.4	23.2	17.2
The Territories					2,429						6.0					.9				
United States—Total	803,501	660,345	491,721	450,480	272,443	122	8.3	8.2	7.4	8.2	6.5	100.0	100.0	100.0	100.0	100.0	9.3	12.7	9.4	12.4
Domestic exports, wheat and wheat flour:																				
Quantity	188,748	140,026	170,624	128,057	66,037			(8)	(8)	(8)	(8)									
Per cent of production	23.5	21.2	34.7	28.4	24.2	[7] 135	[8] 1.9	1.7	2.6	2.3	1.6									

[1] Five-year averages, production divided by population. Average population calculated by prorating differences between decennial census periods.
[2] From decennial census returns.
[3] Less than one-tenth of 1 bushel.
[4] Less than one-tenth of 1 per cent.
[5] Included in "The Territories."
[6] Includes Indian Territory.
[7] Ratio 1911–1915 compared to 1901–1905.
[8] Exports per capita.

TREND OF WHEAT PRODUCTION IN RELATION TO POPULATION, BY STATES AND SECTIONS.

Although production nearly trebled since 1871 in proportion to population, it has remained stationary since 1882–1886.

A generally diminishing proportion of improved acreage in wheat, increased production being due to new brought areas under cultivation.

Increasing wheat deficiency east of the Mississippi.

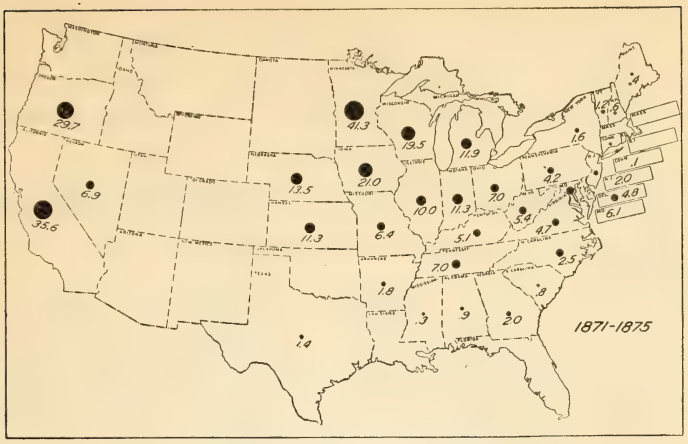
Only in the Mountain States is wheat production increasing more rapidly than population.

Finally, in Table VII (p. 30), are assembled some of the fundamental factors in this retrospective review of prices and price conditions from 1871 to 1915. Units of measurement are geographic divisions (to permit of a general view) and States. The rate of increase of population in relation to wheat production is given in the per capita figures; the shifting in sources of wheat is indicated by State and sectional percentages of the United States production from decade to decade, as well as by the fractions of the total improved land occupied by wheat.

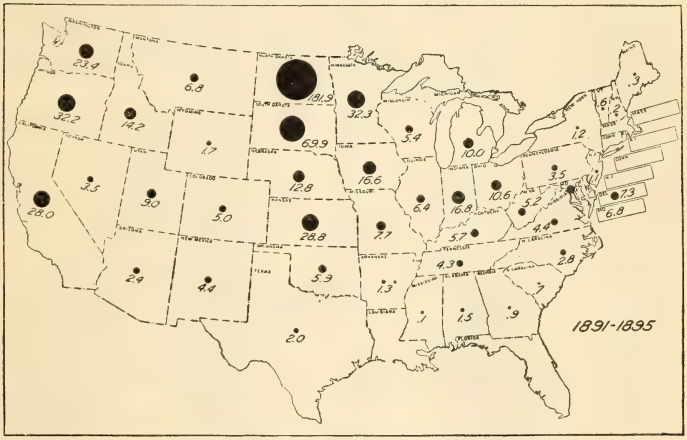
Although during the period covered by this table the wheat production in the United States almost trebled, in proportion to population it has remained stationary since 1882–1886 (8.2 bushels per capita as against 8.3 bushels in 1911–1915). Moreover, a notable and general decline is registered in the proportion of wheat in the total improved land, even in the wheat belt, showing that the increase in production was due to new areas being brought under cultivation, as well as to some slight progress in the yields to the acre. This would be shown more markedly in the last period but for the unusually large wheat crops of 1914 and 1915, due to the stimulating effect of disturbed international conditions.

The proportion of wheat produced east of the Mississippi dropped from 62.2 per cent of the United States total to 26.2 per cent. The East North Central division shows a decline from 38.5 per cent of the national total to 15.4 per cent (Wisconsin dropping from 19.5 to 1.5 bushels per capita); the West North Central division has a corresponding gain. But even in this last division, now producing over half the total wheat, the rate of increase has suffered a notable decline, and population increase is rapidly outstripping wheat production.

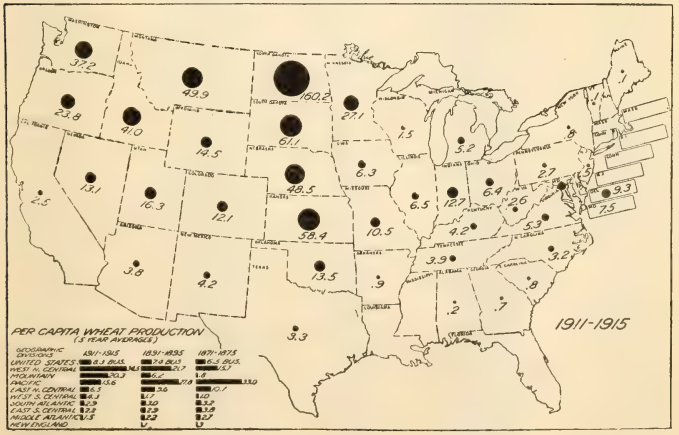
It is only in the Mountain States that any considerable recent growth in the ratio of wheat production to population is shown, but here also it appears to be traceable to new areas brought under cultivation. As yet this region, though gaining at a rapid rate (increase of 265 per cent of 1911–1915 over 1901–1905 as 100 per cent), contributes but 7.5 per cent of the total wheat. According to the 1910 census, 2 per cent of its area was then improved, but within recent years irrigation has added much territory to the producing regions.



MAP 5.—Per capita wheat production, by States, 1871–75.



MAP 6.—Per capita wheat production, by States, 1891–95.



MAP 7.—Per capita wheat production, by States, 1911–15.

[Circles and figures within each State represent wheat production per capita, at 20-year intervals: 1871–75, 1891–95, and 1911–15.]

The three maps on the preceding page (maps 5, 6, and 7) show, through different dimensions of the circles, the per capita wheat production, by States, in 1871–1875, 1891–1895, and 1911–1915; i. e., progress of wheat production in relation to increasing population.

APPENDIX.

AVERAGE FARM PRICES OF WHEAT, BY COUNTIES, 1910–1914.

NOTE.—The data which follow form the bases of maps 1, 3, and 4, and are explained on pages 11 and 24.

Counties have been used as the smallest effective unit of measurement, for the reason that the usual State prices are frequently averages for large expanses of territory with dissimilar physical and price conditions. The basic figures were compiled from returns of some 30,000 township reporters for each of the five years 1910–1914, inclusive, as of December 1. Observations for this period and for a like date of each year were employed to distinguish normal geographic variations from temporary deviations; and to further conduce thereto the price averages have been rounded to a 5-cent unit to overcome occasional minor differences due to such causes as local variations in grade.

As the figures are designed to show geographic variation in prices paid to wheat producers, counties with little or no wheat production have been omitted (those with less than 500 acres in wheat, according to the 1910 census).

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Alabama	100–104	Dekalb.
		Jackson.
		Lauderdale.
		Limestone.
		Madison.
Arizona	95–99	Graham.
		Maricopa.
		Pinal.
Arkansas	90–94	Benton.
		Boone.
		Carroll.
		Madison.
		Marion.
		Washington.
	95–99	Baxter.
		Clay.
		Fulton.
		Greene.
		Independence.
		Izard.
		Newton.
		Randolph.
		Searcy.
		Sharp.
		Stone.
California	80–84	Lassen.
		Modoc.
	85–89	Shasta.
		Siskiyou.
	90–94	Butte.
		Colusa.
		Glenn.
		Lake.
		Sutter.
		Yolo.
	95–99	Fresno.
		Kern.
		Kings.
		Madera.
		Merced.
		Monterey.
California (continued).	95–99	Napa.
		Sacramento.
		San Benito.
		San Joaquin.
		San Luis Obispo.
		Solano.
		Stanislaus.
		Tulare.
	100–104	Alameda.
		Contra Costa.
		Los Angeles.
		Orange.
		Riverside.
		San Diego.
		Santa Barbara.
		Ventura.
Colorado	75–79	Larimer.
		Logan.
		Morgan.
		Phillips.
		Sedgwick.
		Washington.
		Weld.
		Yuma.
	80–84	Adams.
		Arapahoe.
		Boulder.
		Cheyenne.
		Denver.
		Douglas.
		Elbert.
		El Paso.
		Jefferson.
		Kit Carson.
		Lincoln.
	85–89	Bent.
		Conejos.
		Costilla.
		Crowley.
		Eagle.
		Garfield.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Colorado (continued).	85–89	Kiowa.
		Moffat.
		Otero.
		Prowers.
		Rio Blanco.
		Rio Grande.
		Routt.
		Saguache.
	90–94	Delta.
		Dolores.
		La Plata.
		Mesa.
		Montezuma.
		Montrose.
		Ouray.
		San Miguel.
Connecticut. (None)		
Delaware	95–99	Kent.
		New Castle.
		Sussex.
Florida. (None.)		
Georgia	105–109	Catoosa.
		Dade.
		Fannin.
		Gilmer.
		Gordon.
		Murray.
		Pickens.
		Towns.
		Union.
		Walker.
		Whitfield.
	110–114	Bartow.
		Chattooga.
		Cherokee.
		Dawson.
		Floyd.
		Forsyth.
		Hall.
		Lumpkin.
		White.
	115 or over	Clarke.
		Cobb.
		Elbert.
		Fayette.
		Franklin.
		Gwinnett.
		Haralson.
		Hart.
		Henry.
		Jackson.
		Madison.
		Milton.
		Monroe.
		Newton.
		Oconee.
		Oglethorpe.
		Paulding.
		Pike.
		Polk.
		Spalding.
		Walton.
Idaho	65–69	Bannock.
		Bear Lake.
		Bingham.
		Bonneville.
		Fremont.
	70–74	Blaine.
		Cassia.
		Custer.
		Franklin.
		Gooding.
		Lincoln.
		Minidoka.
		Oneida.
		Power.
		Twin Falls.
Idaho (continued)	75–79	Adams.
		Clearwater.
		Idaho.
		Kootenai.
		Latah.
		Lemhi.
		Lewis.
		Nez Perce.
		Washington.
	80–84	Ada.
		Boise.
		Canyon.
		Elmore.
Illinois	85–89	Carroll.
		Champaign.
		Coles.
		Dewitt.
		Douglas.
		Henderson.
		Henry.
		Jo Daviess.
		Lee.
		McDonough.
		McLean.
		Macon.
		Mercer.
		Moultrie.
		Ogle.
		Piatt.
		Rock Island.
		Warren.
		Whiteside.
	90–94	Adams.
		Brown.
		Bureau.
		Calhoun.
		Cass.
		Christian.
		Clark.
		Crawford.
		Cumberland.
		Edgar.
		Edwards.
		Ford.
		Fulton.
		Greene.
		Grundy.
		Hancock.
		Iroquois.
		Jasper.
		Jersey.
		Kane.
		Kankakee.
		Kendall.
		Knox.
		La Salle.
		Lawrence.
		Livingston.
		Logan.
		McHenry.
		Macoupin.
		Marshall.
		Mason.
		Menard.
		Montgomery.
		Morgan.
		Peoria.
		Pike.
		Putnam.
		Sangamon.
		Schuyler.
		Scott.
		Shelby.
		Stark.
		Tazewell.
		Vermilion.
		Wabash.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Illinois (continued).	90–94	Wayne.
		White.
		Will.
		Woodford.
	95–99	Alexander.
		Bond.
		Clay.
		Clinton.
		Cook.
		Dupage.
		Effingham.
		Fayette.
		Franklin.
		Gallatin.
		Hamilton.
		Hardin.
		Jackson.
		Jefferson.
		Johnson.
		Lake.
		Madison.
		Marion.
		Massac.
		Monroe.
		Perry.
		Pope.
		Pulaski.
		Randolph.
		Richland.
		St. Clair.
		Saline.
		Union.
		Washington.
		Williamson.
Indiana	90–94	Benton.
		Boone.
		Carroll.
		Cass.
		Clay.
		Clinton.
		Crawford.
		Daviess.
		Dubois.
		Fountain.
		Fulton.
		Gibson.
		Grant.
		Greene.
		Hamilton.
		Hancock.
		Harrison.
		Hendricks.
		Henry.
		Howard.
		Jasper.
		Johnson.
		Knox.
		Kosciusko.
		Lake.
		Laporte.
		Lawrence.
		Madison.
		Marion.
		Marshall.
		Martin.
		Miami.
		Montgomery.
		Morgan.
		Newton.
		Orange.
		Owen.
		Parke.
		Perry.
		Pike.
		Porter.
		Posey.
		Pulaski.
		Putnam.
		Rush.
		Shelby.
		Spencer.
		Starke.
		Sullivan.
		Tippecanoe.
		Tipton.
		Vanderburg.
		Vermilion.
		Vigo.
		Warren.
		Warrick.
		White.
	95–99	Adams.
		Allen.
		Bartholomew.
		Blackford.
		Brown.
		Clark.
		Dearborn.
		Decatur.
		Dekalb.
		Delaware.
		Elkhart.
		Fayette.
		Floyd.
		Franklin.
		Huntington.
		Jackson.
		Jay.
		Jefferson.
		Jennings.
		Lagrange.
		Monroe.
		Noble.
		Ohio.
		Randolph.
		Ripley.
		St. Joseph.
		Scott.
		Steuben.
		Switzerland.
		Union.
		Wabash.
		Washington.
		Wayne.
		Wells.
		Whitley.
Iowa	85–89	Adair.
		Adams.
		Allamakee.
		Appanoose.
		Audubon.
		Boone.
		Carroll.
		Cass.
		Cedar.
		Cherokee.
		Clarke.
		Clayton.
		Clinton.
		Crawford.
		Dallas.
		Davis.
		Decatur.
		Des Moines.
		Dubuque.
		Fayette.
		Fremont.
		Guthrie.
		Hamilton.
		Hancock.
		Hardin.
		Harrison.
		Henry.
		Humboldt.
		Ida.
		Iowa.
		Jackson.
		Jasper.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Iowa (continued) ..	85–89	Jefferson.
		Johnson.
		Keokuk.
		Kossuth.
		Lee.
		Louisa.
		Lucas.
		Lyon.
		Madison.
		Mahaska.
		Marion.
		Marshall.
		Mills.
		Monona.
		Monroe.
		Montgomery.
		Muscatine.
		Page.
		Plymouth.
		Polk.
		Pottawattamie.
		Poweshiek.
		Ringgold.
		Scott.
		Shelby.
		Sioux.
		Story.
		Tama.
		Taylor.
		Union.
		Van Buren.
		Wapello.
		Warren.
		Washington.
		Wayne.
		Webster.
		Winnebago.
		Winneshiek.
		Woodbury.
		Worth.
		Wright.
Kansas.....	80–84	Cheyenne.
		Decatur.
		Graham.
		Norton.
		Osborne.
		Phillips.
		Rawlins.
		Rooks.
		Sheridan.
		Sherman.
		Smith.
		Thomas.
	85–89	Allen.
		Anderson.
		Barber.
		Barton.
		Bourbon.
		Brown.
		Butler.
		Chase.
		Chautauqua.
		Cherokee.
		Clark.
		Clay.
		Cloud.
		Coffey.
		Comanche.
		Cowley.
		Crawford.
		Dickinson.
		Doniphan.
		Edwards.
		Elk.
		Ellis.
		Ellsworth.
		Finney.
		Ford.
		Franklin.
Kansas (continued).	*Cents.* 85–89	Geary.
		Gove.
		Grant.
		Gray.
		Greeley.
		Greenwood.
		Hamilton.
		Harper.
		Harvey.
		Haskell.
		Hodgeman.
		Jackson.
		Jewell.
		Kearny.
		Kingman.
		Kiowa.
		Labette.
		Lane.
		Lincoln.
		Linn.
		Logan.
		Lyon.
		McPherson.
		Marion.
		Marshall.
		Meade.
		Mitchell.
		Montgomery.
		Morris.
		Morton.
		Nemaha.
		Neosho.
		Ness.
		Osage.
		Ottawa.
		Pawnee.
		Pottawatomie.
		Pratt.
		Reno.
		Republic.
		Rice.
		Riley.
		Rush.
		Russell.
		Saline.
		Scott.
		Sedgwick.
		Seward.
		Shawnee.
		Stafford.
		Stanton.
		Stevens.
		Sumner.
		Trego.
		Wabaunsee.
		Wallace.
		Washington.
		Wichita.
		Wilson.
		Woodson.
	90–94	Atchison.
		Douglas.
		Jefferson.
		Johnson.
		Leavenworth.
		Miami.
		Wyandotte.
Kentucky.....	90–94	Adair.
		Allen.
		Anderson.
		Ballard.
		Barren.
		Bath.
		Boone.
		Bourbon.
		Boyd.
		Boyle.
		Bracken.
		Breckenridge.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Kentucky (continued).	90–94	Bullitt.
	95–99	Butler.
		Caldwell.
		Calloway.
		Campbell.
		Carlisle.
		Carroll.
		Carter.
		Casey.
		Christian.
		Clark.
		Clinton.
		Crittenden.
		Cumberland.
		Daviess.
		Edmonson.
		Elliott.
		Fayette.
		Fleming.
		Franklin.
		Fulton.
		Gallatin.
		Garrard.
		Grant.
		Graves.
		Grayson.
		Green.
		Greenup.
		Hancock.
		Hardin.
		Harrison.
		Hart.
		Henderson.
		Henry.
		Hickman.
		Hopkins.
		Jefferson.
		Jessamine.
		Kenton.
		Larue.
		Laurel.
		Lawrence.
		Lewis.
		Lincoln.
		Livingston.
		Logan.
		Lyon.
		McCracken.
		McCreary.
		McLean.
		Madison.
		Marion.
		Marshall.
		Mason.
		Meade.
		Mercer.
		Metcalfe.
		Monroe.
		Montgomery.
		Muhlenberg.
		Nelson.
		Ohio.
		Oldham.
		Owen.
		Pendleton.
		Pulaski.
		Robertson.
		Rockcastle.
		Russell.
		Scott
		Shelby.
		Simpson.
		Spencer.
		Taylor.
		Todd.
		Trigg.
		Trimble.
		Union.
		Warren.
		Washington.
		Wayne.
		Webster.
		Woodford.
Louisiana. (None.)		
Maine. (None.)		
Maryland	95–99	Allegany.
		Anne Arundel.
		Baltimore.
		Calvert.
		Caroline.
		Carroll.
		Cecil.
		Charles.
		Dorchester.
		Frederick.
	95–99	Harford.
		Howard.
		Kent.
		Montgomery.
		Prince Georges.
		Queen Annes.
		St. Marys.
		Talbot.
		Washington.
	100–104	Garrett.
		Somerset.
		Wicomico.
		Worcester.
Mass. (None.)		
Michigan	90–94	Alcona.
		Alpena.
		Antrim.
		Arenac.
		Bay.
		Benzie.
		Charlevoix.
		Clare.
		Emmet.
		Gladwin.
		Grand Traverse.
		Gratiot.
		Iosco.
		Isabella.
		Kalkaska.
		Lake.
		Leelanau.
		Manistee.
		Mason.
		Mecosta.
		Midland.
		Missaukee.
		Montcalm.
		Newaygo.
		Oceana.
		Ogemaw.
		Osceola.
		Presque Isle
		Wexford.
	95–99	Allegan.
		Barry.
		Berrien.
		Branch.
		Calhoun.
		Cass.
		Clinton.
		Eaton.
		Genesee.
		Hillsdale.
		Huron.
		Ingham.
		Ionia.
		Jackson.
		Kalamazoo.
		Kent.
		Lapeer.
		Lenawee.
		Livingston.
		Macomb.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Michigan (continued).	95–99	Monroe.
		Muskegon.
		Oakland.
		Ottawa.
		Saginaw.
		St. Clair.
		St. Joseph.
		Sanilac.
		Shiawassee.
		Tuscola.
		Van Buren.
		Washtenaw.
		Wayne.
Minnesota	85–89	Becker.
		Beltrami.
		Bigstone.
		Chippewa.
		Clay.
		Clearwater.
		Cottonwood.
		Dodge.
		Douglas.
		Faribault.
		Fillmore.
		Freeborn.
		Grant.
		Houston.
		Hubbard.
		Jackson.
		Kandiyohi.
		Kittson.
		Lac qui Parle.
		Lincoln.
		Lyon.
		Mahnomen.
		Marshall.
		Martin.
		Mower.
		Murray.
		Nobles.
		Norman.
		Olmsted.
		Otter Tail.
		Pennington.
		Pipestone.
		Polk.
		Pope.
		Red Lake.
		Redwood.
		Renville.
		Rock.
		Roseau.
		Stevens.
		Swift.
		Todd.
		Traverse.
		Wabasha.
		Wadena.
		Wilkin.
		Winona.
		Yellow Medicine.
	90–94	Anoka.
		Benton.
		Blue Earth.
		Brown.
		Carver.
		Chisago.
		Crow Wing.
		Dakota.
		Goodhue.
		Hennepin.
		Isanti.
		Kanabec.
		Le Sueur.
		McLeod.
		Meeker.
		Mille Lacs.
		Morrison.
		Nicollet.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Minnesota (continued).	90–94	Pine.
		Ramsey.
		Rice.
		Scott.
		Sherburne.
		Sibley.
		Stearns.
		Steele.
		Waseca.
		Washington.
		Watonwan.
		Wright.
Mississippi. (None.)		
Missouri	85–89	Andrew.
		Atchison.
		Caldwell.
		Carroll.
		Chariton.
		Cooper.
		Daviess.
		Dekalb.
		Gentry.
		Grundy.
		Harrison.
		Holt.
		Howard.
		Linn.
		Livingston.
		Mercer.
		Nodaway.
		Pettis.
		Putnam.
		Saline.
		Sullivan.
		Worth.
	90–94	Adair.
		Audrain.
		Barry.
		Barton.
		Bates.
		Benton.
		Bollinger.
		Boone.
		Buchanan.
		Callaway.
		Camden.
		Cape Girardeau.
		Carter.
		Cass.
		Cedar.
		Christian.
		Clark.
		Clay.
		Clinton.
		Cole.
		Crawford.
		Dade.
		Dallas.
		Dent.
		Douglas.
		Franklin.
		Gasconade.
		Greene.
		Henry.
		Hickory.
		Howell.
		Jackson.
		Jasper.
		Jefferson.
		Johnson.
		Knox.
		Laclede.
		Lafayette.
		Lawrence.
		Lewis.
		Lincoln.
		McDonald.
		Macon.
		Madison.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Missouri (continued).	90–94	Maries.
		Marion.
		Miller.
		Moniteau.
		Monroe.
		Montgomery.
		Morgan.
		Newton.
		Oregon.
		Osage.
		Ozark.
		Perry.
		Phelps.
		Pike.
		Platte.
		Polk.
		Pulaski.
		Ralls.
		Randolph.
		Ray.
		Ripley.
		St. Charles.
		St. Clair.
		Ste. Genevieve.
		St. Francois.
		St. Louis.
		Schuyler.
		Scotland.
		Shannon.
		Shelby.
		Stone.
		Taney.
		Texas.
		Vernon.
		Warren.
		Washington.
		Webster.
		Wright.
	95–99	Butler.
		Dunklin.
		Iron.
		Mississippi.
		New Madrid.
		Pemiscot.
		Reynolds.
		Scott.
		Stoddard.
		Wayne.
Montana	70–74	Blaine.
		Carbon.
		Cascade.
		Chouteau.
		Fergus.
		Flathead.
		Gallatin.
		Hill.
		Lincoln.
		Madison.
		Meagher.
		Park.
		Sanders.
		Stillwater.
		Sweet Grass.
		Teton.
		Yellowstone.
	75–79	Beaverhead.
		Big Horn.
		Broadwater.
		Custer.
		Dawson.
		Deerlodge.
		Granite.
		Jefferson.
		Lewis and Clark.
		Missoula.
		Musselshell.
		Powell.
		Ravalli.
		Rosebud.
		Sheridan.
		Silverbow.
		Valley.
Nebraska	75–79	Banner
		Boxbutte.
		Boyd.
		Brown.
		Chase.
		Cherry.
		Cheyenne.
		Dawes.
		Deuel.
		Frontier.
		Garden.
		Garfield.
		Hayes.
		Holt.
		Keith.
		Keyapaha.
		Kimball.
		Loup.
		Morrill.
		Perkins.
		Rock.
		Scotts Bluff.
		Sheridan.
		Sioux.
	80–84	Adams.
		Antelope.
		Boone.
		Buffalo.
		Butler.
		Cedar.
		Clay.
		Colfax.
		Cuming.
		Custer.
		Dawson.
		Dixon.
		Dodge.
		Dundy.
		Fillmore.
		Franklin.
		Furnas.
		Gosper.
		Greeley.
		Hall.
		Hamilton.
		Harlan.
		Hitchcock.
		Howard.
		Jefferson.
		Kearney.
		Knox.
		Lincoln.
		Madison.
		Merrick.
		Nance.
		Nuckolls.
		Phelps.
		Pierce.
		Platte.
		Polk.
		Redwillow.
		Saline.
		Saunders.
		Seward.
		Sherman.
		Stanton.
		Thayer.
		Valley.
		Wayne.
		Webster.
		Wheeler.
		York.
	85–89	Burt.
		Cass.
		Dakota.
		Douglas.
		Gage.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Nebraska (continued).	85–89	Johnson.
		Lancaster.
		Nemaha.
		Otoe.
		Pawnee.
		Richardson.
		Sarpy.
		Thurston.
		Washington.
Nevada	90–94	Churchill.
		Douglas.
		Humboldt.
		Lyon.
		Ormsby.
		Storey.
		Washoe.
New Hampshire.		
(None.)		
New Jersey	95–99	Burlington.
		Camden.
		Cumberland.
		Gloucester.
		Hunterdon.
		Mercer.
		Middlesex.
		Monmouth.
		Morris.
		Salem.
		Somerset.
		Warren.
New Mexico	85–89	Mora.
		San Miguel.
		Taos.
	90–94	Rio Arriba.
		San Juan.
		Santa Fe.
	95–99	Bernalillo.
		Dona Ana.
		Sandoval.
		Socorro.
		Torrance.
		Valencia.
New York	100–104	Allegany.
		Cattaraugus.
		Cayuga.
		Chautauqua.
		Chemung.
		Erie.
		Genesee.
		Livingston.
		Monroe.
		Niagara.
		Onondaga.
		Ontario.
		Orleans.
		Schuyler.
		Seneca.
		Steuben.
		Tioga.
		Tompkins.
		Wayne.
		Wyoming.
		Yates.
	110–114	Orange.
		Ulster.
North Carolina	105–109	Alamance.
		Buncombe.
		Caswell.
		Cherokee.
		Clay.
		Durham.
		Graham.
		Guilford.
		Haywood.
		Henderson.
		Jackson.
		McDowell.
		Macon.
		Madison.
North Carolina (continued).	105–109	Mitchell.
		Orange.
		Person.
		Polk.
		Rockingham.
		Rutherford.
		Swain.
		Transylvania.
		Yancey.
	110–114	Alexander.
		Alleghany.
		Ashe.
		Burke.
		Cabarrus.
		Caldwell.
		Catawba.
		Chatham.
		Cleveland.
		Davisdon.
		Davie.
		Forsyth.
		Franklin.
		Gaston.
		Granville.
		Iredell.
		Johnston.
		Lee.
		Lincoln.
		Mecklenburg.
		Montgomery.
		Moore.
		Randolph.
		Rowan.
		Stanly.
		Stokes.
		Surry.
		Vance.
		Wake.
		Warren.
		Watauga.
		Wilkes.
		Yadkin.
	115 or over	Anson.
		Richmond.
		Union.
North Dakota	80–84	Adams.
		Billings.
		Bowman.
		Burke.
		Divide.
		Dunn.
		Hettinger.
		McKenzie.
		McLean.
		Mercer.
		Mountrail.
		Morton.
		Oliver.
		Renville.
		Stark.
		Ward.
		Williams.
	85–89	Barnes.
		Benson.
		Bottineau.
		Burleigh.
		Cass.
		Cavalier.
		Dickey.
		Eddy.
		Emmons.
		Foster.
		Golden Valley.
		Grand Forks.
		Griggs.
		Kidder.
		La Moure.
		Logan.
		McHenry.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
North Dakota (continued).	85–89	McIntosh.
		Nelson.
		Pembina.
		Pierce.
		Ramsey.
		Ransom.
		Richland.
		Rolette.
		Sargent.
		Sheridan.
		Steele.
		Stutsman.
		Towner.
		Traill.
		Walsh.
		Wells.
Ohio	95–99	Adams.
		Allen.
		Ashland.
		Athens.
		Auglaize.
		Belmont.
		Brown.
		Butler.
		Carroll.
		Champaign.
		Clark.
		Clermont.
		Clinton.
		Columbiana.
		Coshocton.
		Crawford.
		Dark.
		Defiance.
		Delaware.
		Erie.
		Fairfield.
		Fayette.
		Franklin.
		Fulton.
		Gallia.
		Greene.
		Guernsey.
		Hancock.
		Hardin.
		Harrison.
		Henry.
		Highland.
		Hocking.
		Holmes.
		Huron.
		Jackson.
		Jefferson.
		Knox.
		Lawrence.
		Licking.
		Logan.
		Lucas.
		Madison.
		Mahoning.
		Marion.
		Medina.
		Meigs.
		Mercer.
		Miami.
		Monroe.
		Montgomery.
		Morgan.
		Morrow.
		Muskingum.
		Noble.
		Ottawa.
		Paulding.
		Perry.
		Pickaway.
		Pike.
		Portage.
		Preble.
		Putnam.
Ohio (continued)	95–99	Richland.
		Ross.
		Sandusky.
		Scioto.
		Seneca.
		Shelby.
		Stark.
		Summit.
		Tuscarawas.
		Union.
		Van Wert.
		Vinton.
		Warren.
		Washington.
		Wayne.
		Williams.
		Wood.
		Wyandot.
	100–104	Ashtabula.
		Cuyahoga.
		Geauga.
		Hamilton.
		Lake.
		Lorain.
		Trumbull
Oklahoma	85–89	Adair.
		Alfalfa.
		Beaver.
		Beckham.
		Blaine.
		Caddo.
		Canadian.
		Cherokee.
		Cimarron.
		Craig.
		Custer.
		Delaware.
		Dewey.
		Ellis.
		Garfield.
		Grant.
		Harper.
		Kay.
		Kingfisher.
		Kiowa.
		Logan.
		Major.
		Mayes.
		Noble.
		Nowata.
		Osage.
		Ottawa.
		Pawnee.
		Payne.
		Roger Mills.
		Rogers.
		Texas.
		Tulsa.
		Wagoner.
		Washington.
		Washita.
		Woods.
		Woodward.
	90–94	Cleveland.
		Comanche.
		Cotton.
		Greer.
		Harmon.
		Jackson.
		Oklahoma.
		Tillman.
Oregon	75–79	Gilliam.
		Morrow.
		Umatilla.
		Union.
		Wallowa.
	80–84	Baker.
		Crook.
		Grant.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Oregon (continued).	80–84	Klamath.
		Malheur.
		Sherman.
		Wasco.
		Wheeler.
	85–89	Benton.
		Clackamas.
		Douglas.
		Harney.
		Jackson.
		Lake.
		Lane.
		Linn.
		Marion.
		Polk.
		Washington.
		Yamhill.
Pennsylvania	95–99	Adams.
		Armstrong.
		Bedford.
		Berks.
		Blair.
		Bucks.
		Butler.
		Center.
		Chester.
		Clarion.
		Clearfield.
		Clinton.
		Colombia.
		Cumberland.
		Dauphin.
		Delaware.
		Franklin.
		Fulton.
		Huntingdon.
		Indiana.
		Jefferson.
		Juniata.
		Lancaster.
		Lebanon.
		Lehigh.
		Lycoming.
		Mifflin.
		Montgomery.
		Montour.
		Northampton.
		Northumberland.
		Perry.
		Philadelphia.
		Schuylkill.
		Snyder.
		Union.
		Washington.
		Westmoreland.
		York.
	100–104	Allegheny.
		Beaver.
		Bradford.
		Cambria.
		Carbon.
		Crawford.
		Erie.
		Fayette.
		Greene.
		Lawrence.
		Luzerne.
		Mercer.
		Monroe.
		Somerset.
		Tioga.
		Venango.
Rhode Island. (None.)		
South Carolina	115 or over	Abbeville.
		Anderson.
		Cherokee.
		Greenville.
South Carolina (continued).	115 or over	Greenwood.
		Laurens.
		Lexington.
		Newberry.
		Oconee.
		Pickens.
		Saluda.
		Spartanburg.
		Union.
		York.
South Dakota	80–84	Aurora.
		Brule.
		Buffalo.
		Butte.
		Charles Mix.
		Custer.
		Douglas.
		Fall River.
		Gregory.
		Hand.
		Hyde.
		Jerauld.
		Lawrence.
		Lyman.
		Meade.
		Pennington.
		Sully.
	85–89	Beadle.
		Bonhomme.
		Brookings.
		Brown.
		Campbell.
		Clark.
		Clay.
		Codington.
		Davison.
		Day.
		Deuel.
		Edmunds.
		Faulk.
		Grant.
		Hamlin.
		Hanson.
		Hutchinson.
		Kingsbury.
		Lake.
		Lincoln.
		McCook.
		McPherson.
		Marshall.
		Miner.
		Minnehaha.
		Moody.
		Potter.
		Roberts.
		Sanborn.
		Spink.
		Turner.
		Union.
		Walworth.
		Yankton.
Tennessee	95–99	Bedford.
		Cannon.
		Carroll.
		Cheatham.
		Clay.
		Coffee.
		Crockett.
		Davidson.
		Dekalb
		Dickson.
		Dyer.
		Franklin.
		Gibson.
		Giles.
		Haywood.
		Henry.
		Hickman.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Tennessee (continued).	95–99	Humphreys.
		Jackson.
		Lake.
		Lauderdale.
		Lawrence.
		Lincoln.
		Macon.
		Madison.
		Marshall.
		Maury.
		Montgomery.
		Moore.
		Obion.
		Overton.
		Pickett
		Putnam.
		Robertson.
		Rutherford.
		Smith.
		Stewart.
		Sumner.
		Trousdale.
		Weakley.
		White.
		Williamson.
		Wilson.
	100–104	Anderson.
		Bledsoe.
		Blout.
		Bradley.
		Carter.
		Claiborne.
		Cocke.
		Grainger.
		Greene.
		Grundy.
		Hamblen.
		Hamilton.
		Hancock.
		Hawkins.
		James.
		Jefferson.
		Johnson.
		Knox.
		Loudon.
		McMinn.
		Marion.
		Meigs.
		Monroe.
		Polk.
		Rhea.
		Roane.
		Sequatchie.
		Sevier.
		Sullivan.
		Unicoi.
		Union.
		Van Buren.
		Warren.
		Washington.
Texas	90–94	Armstrong.
		Briscoe.
		Carson.
		Castro.
		Collingsworth.
		Dallam.
		Deaf Smith.
		Gray.
		Hale.
		Hansford.
		Hartley.
		Hemphill.
		Hutchinson.
		Lipscomb.
		Moore.
		Ochiltree.
		Oldham.
		Parmer.
		Potter.
Texas (continued)..	90–94	Randall.
		Roberts.
		Sherman.
		Swisher.
		Wheeler.
	95–99	Archer.
		Baylor.
		Bell.
		Bosque.
		Burnet.
		Clay.
		Coryell.
		Foard.
		Gillespie.
		Hamilton.
		Hardeman.
		Haskell.
		Jones.
		Kerr.
		Knox.
		McLennan.
		Wichita.
		Wilbarger.
		Young.
	100–104	Collin.
		Cooke.
		Dallas.
		Denton.
		Fannin.
		Grayson.
		Montague.
		Parker.
		Tarrant.
		Wise.
Utah	75–79	Boxelder.
		Cache.
		Davis.
		Juab.
		Millard.
		Rich.
		Tooele.
	80–84	Beaver.
		Emery.
		Piute.
		Sanpete.
		Sevier.
		Wayne.
	85–89	Carbon.
		Duchesne.
		Morgan.
		Salt Lake.
		Summit.
		Uinta.
		Utah.
		Wasatch.
		Weber.
		Garfield.
		Iron.
		Washington.
Vermont. (None.)		
Virginia	95–99	Alexandria.
		Clarke.
		Culpeper.
		Essex.
		Fairfax.
		Fauquier.
		Frederick.
		Greene.
		King George.
		Lancaster.
		Loudoun.
		Madison.
		Middlesex.
		Northumberland.
		Orange.
		Page.
		Prince William.
		Rappahannock.
		Richmond.

State.	Approximate farm price, per bushel.	Counties.
	Cents.	
Virginia (continued)	95–99	Shenandoah.
		Spotsylvania.
		Stafford.
		Warren.
		Westmoreland.
	100–104	Albemarle.
		Amelia.
		Amherst.
		Appomattox.
		Augusta.
		Bedford.
		Botetourt.
		Buckingham.
		Campbell.
		Caroline.
		Charles City.
		Chesterfield.
		Cumberland.
		Fluvanna.
		Franklin.
		Gloucester.
		Goochland.
		Hanover.
		Henrico.
		King and Queen.
		King William.
		Lee.
		Louisa.
		Nelson.
		New Kent.
		Powhatan.
		Prince Edward.
		Roanoke.
		Rockbridge.
		Rockingham.
		Russell.
		Scott.
		Smyth.
		Washington.
	110–114	Alleghany.
		Bath.
		Bland.
		Brunswick.
		Carroll.
		Charlotte.
		Craig.
		Dinwiddie.
		Floyd.
		Giles.
		Grayson.
		Halifax.
		Henry.
		Highland.
		Lunenburg.
		Mecklenburg.
		Montgomery.
		Nottoway.
		Patrick.
		Pittsylvania.
		Prince George.
		Pulaski.
		Tazewell.
		Wythe.
Washington	75–79	Adams.
		Asotin.
		Benton.
		Columbia.
		Douglas.
		Ferry.
		Franklin.
		Garfield.
		Grant.
		Lincoln.
		Pend Oreille.
		Spokane.
		Stevens.
		Walla Walla.
		Whitman.
Washington (continued).	80–84	Chelan.
		Kittitas.
		Klickitat.
		Okanogan.
		Yakima.
West Virginia	95–99	Berkeley.
		Brooke.
		Hancock.
		Jefferson.
		Marshall.
		Morgan.
		Ohio.
	100–104	Cabell.
		Hampshire.
		Hardy.
		Jackson.
		Lincoln.
		Mason.
		Mineral.
		Monongalia.
		Pleasants.
		Putnam
		Tyler.
		Wayne.
		Wetzel.
		Wirt.
		Wood.
	105–109	Barbour.
		Braxton.
		Calhoun.
		Doddridge.
		Gilmer.
		Grant.
		Greenbrier.
		Harrison.
		Kanawha.
		Lewis.
		Marion.
		Mercer.
		Monroe.
		Pendleton.
		Pocahontas.
		Preston.
		Ritchie.
		Roane.
		Summers.
		Taylor.
		Upshur.
Wisconsin	85–89	Buffalo.
		Jackson.
		La Crosse.
		Monroe.
		Pepin.
		Trempealeau.
		Vernon.
	90–94	Barron.
		Brown.
		Burnett.
		Calumet.
		Chippewa.
		Clark.
		Columbia.
		Crawford.
		Dane.
		Dodge.
		Door.
		Dunn.
		Eu Claire.
		Fond du Lac.
		Grant.
		Green Lake.
		Iowa.
		Jefferson.
		Juneau.
		Kewaunee.
		Lafayette.
		Marathon.
		Oconto.

State.	Approximate farm price, per bushel.	Counties.	State.	Approximate farm price, per bushel.	Counties.
	Cents.			*Cents.*	
Wisconsin (continued).	90–94	Outagamie.	Wyoming	70–74	Lincoln.
		Pierce.		75–79	Goshen.
		Polk.			Laramie.
		Richland.			Platte.
		St. Croix.		80–84	Bighorn.
		Sauk.			Campbell.
		Shawano.			Crook.
		Washburn.			Hot Springs.
		Waupaca.			Johnson.
		Winnebago.			Park.
	95–99	Manitowoc			Sheridan.
		Sheboygan.			Washakie.
		Washington.			Weston.
		Waukesha.			

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